Aspects of the Language of Autistic Children: a study in linguistic pragmatics

Abhandlung

zur Erlangung der Doktorwürde
der Philosophischen Fakultät I
der
Universität Zürich

vorgelegt von

Stefan Weber
von Zug und Zürich

1981

Angenommen auf Antrag von Herrn Prof. Dr. E. Leisi

Zürich 1980
W. Schneider, Druckerei, Zürich

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Danken
möchte ich den Kindern und Jugendlichen,
welche die NSAC-Schule in Sussex, England besuchen;
der Leitung dieser Schule und ihren Lehrerinnen und Lehrern;
der National Society for Autistic Children (NSAC), England.
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und Dr.L.Wing vom MRC Institute of Psychiatry, London.

Zürich, im Herbst 1980

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Preface

Language is an instrument for creating a structured world around oneself.
It can be used as a tool for obtaining desired objects and for getting people to do things.
It can be used to represent one's experiences of outside reality and of one's thoughts and dreams,and to coordinate the world of one's thoughts and acts.
It can be the means of interpreting and processing information.
It can be used as a looking glass to reflect upon one's own activities.
It can be used to establish and maintain contact with one's fellow humans.
It can also be dealt with in a playful manner and thus be a source of pleasure,
if,
if one knows how to handle the tool;if one can create,communicate and understand the content,the meaning of language.
Most people can.
Some people,however,cannot.They might have learnt how to apply grammatical rules,they might have mastered the 'mechanics' of language,but they hardly understand the meaning which linguistic forms conventionally carry.For them language can be a very bewildering object,and not at all a means of intentionally representing,structuring and interpreting their world or establishing communication.

In this paper we shall look at a group of children whose use and understanding of language is impaired - severely impaired and in specific ways.The children we shall discuss have been classified as 'autistic'.Their impairments,their pattern of behaviour,constitute the clinical syndrome of 'Early Childhood Autism'.Language,all forms of language,spoken and non-spoken, create enormous problems for these children.

In this paper we shall approach this subject from a linguist's viewpoint and shall analyse and discuss in detail some aspects of the children's use and understanding of language in actual social contexts.

During the last two decades quite a lot of research has been undertaken in the field of childhood autism.The diagnosis of 'autism' has come to be used more often,which indicates,on the one hand,that the problems of abnormal childhood behaviour have received increased and more differentiated attention,and, on the other hand,that a definite and precise scientific use of the term has not been agreed upon.Various suggestions for a clinical definition have been made over the years,lists of symptoms and detailed criteria have been presented.The search for the very basic causal impairments has continued and in the last few years interest has focussed on cognitive development and on various aspects of language,on communication and on the use of symbols in autistic children.Ricks and Wing[1] conclude:

> "All that can be said with certainty at the present stage is that abnormalities in the handling of symbols and in the development of language and other forms of communication are prominent features in early childhood autism.They may be the primary problems which explain all the other aspects of the syndrome,but,until more facts are available,the question must remain open."

Most of the research in this field has,of course,been undertaken by psychiatrists,medical doctors and psychologists.I believe,however,that the acquisition and use of language and the communicative competence of autistic children,which differs very much from that of 'normal' children,should also be investigated by linguists.

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1) Ricks,D.M./Wing,L.:"Language,Communication and the Use of Symbols" in Wing,L.(ed.) Early Childhood Autism,2nd ed.Pergamon,Oxford,1976;p.134.

I.INTRODUCTION

1)The goal of this study

The disturbed acquisition of language and the inability to process linguistic information adequately are considered central features of early childhood autism.As we shall see later (p.15ff),this impairment can become evident in various individual linguistic functions.The picture of the autistic child's language disorder varies considerably from individual to individual.Many specific features are typical,but it is hard to find one single impairment which might be considered a diagnostic criterion.

The subject we are interested in is the analysis of the autistic child's use and understanding of language for the purpose of handling communicative intentions and interaction.We do not wish to concentrate on one single feature of language, such as the phonetic,syntactic or semantic aspect,but will rather examine how autistic children use elements of a language when they intend to communicate.

We are also interested in comparing the types of communicative intentions expressed by autistic children with those of 'normal' children.

We will not only examine the actual verbal utterances of the children,but will describe and analyse the whole speech-situation.

Again,we do not want to look at the linguistic performance of children in the classroom or in the language-training laboratory,but rather at communicative intentions expressed in free and informal situations.

Another question is that of how the linguist can account for the autistic child's communicative acts within the framework of a linguistic theory.

We will also have to ask which conclusions can be drawn from our linguistic analysis.On the one hand these findings must then be linked with research undertaken in related fields, on the other hand we will have to ask about their practical

relevance.
It is not the goal of this study to provide the foundation of a new and comprehensive language-training programme,but, so we hope,our discussion of certain aspects of the children's functioning can increase the awareness of the specific nature of their impairment and thus lead to a better understanding of them and to better communication with them.

2) The author's interests

An investigation of this topic interests the author for several reasons:

a) The detailed analysis of one particular aspect of early childhood autism,the attempt to grasp just what actually happens linguistically in the severely impaired communication of these children,can contribute to a better understanding of the whole picture of the functioning of autistic children.

b) Linguists have too often been concerned with the ideal speaker and the ideal listener in an ideal communicative situation.The theoretical work in various fields within modern linguistics and the philosophy of language has provided interesting models and descriptions of linguistic competence and performance.But theoretical studies of linguistics must be linked with actual concrete situations in which people use language.In this paper I shall attempt to examine such examples within a framework of modern theoretical research: linguistic pragmatics.
Concepts developed in very recent pragmatic studies of language will be applied to actual contexts of language-use.But the speakers and listeners I am concerned with here (and this to my mind emphasises the actuality of this study),are far -very far- from being ideal users and recipients of language:they are autistic children.

c) I will examine the autistic child's communicative use of language within the framework of linguistic pragmatics. This is, to my knowledge, a new approach to the subject. An investigation of the functioning of children with cognitive and linguistic deficiencies (of which early childhood autism represents an extreme variant) has so far been undertaken very rarely within linguistic pragmatics. I consider this kind of approach to be important and promising for further research, because linguistic pragmatics

> "occupies the interface between linguistic, cognitive, and social development" [1].

These aspects, of course, are of central importance in the disturbed development of autistic children.

3) The study

I was first made aware of the enormous problems of early childhood autism by a very informative report shown on television in England. Interested in learning more about the psychological, social, and linguistic aspects of this syndrome, I studied new books, articles and reports published mainly by British and American researchers (the number of studies published in German is much smaller). I also contacted the National Society for Autistic Children in England. When plans were considered actually to study these children and to write a paper in linguistics dealing with their communicative use of language, this organisation made it possible for me to visit one of its schools in the South of England. This school aims at helping and educating about thirty-three children academically and

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1) Bates, E.: Language and Context: The Acquisition of Pragmatics, Academic Press, New York, 1976; p.3

socially.Most of these live and go to school there;a number of more advanced boys live with a family in a nearby town and are brought in every morning with the school bus.The headmaster kindly offered me a room in the school,where I was able to stay for almost three weeks in September 1977, and could thus live with,observe,talk and 'play'with the children.There were eight girls and twenty-five boys,aged nine to seventeen,who showed a wide range of autistic impairments.

I spent many an hour sitting in the children's rooms,'playing' with them or watching in the playground and listening to them in the classrooms.I took notes and tried to record their utterances on tape.The latter proved to be rather difficult for several reasons:Since the children ran about and wandered around a lot when allowed to play outside,the tape-recorder had to be used mainly indoors.Here other problems arose. Autistic children (in my experience) rarely communicate verbally with each other,and I often had to wait very long before I was able to record spontaneous speech.This usually took place between an autistic child and a non-autistic adult.

Only one boy directly refused to be "cord",others were fascinated by the slow rotation of the reels and repeatedly touched and sniffed at the foam rubber wind-shield of the microphone. No child,however,tried to play with the tape-recorder by deliberately 'producing'himself or creating unusual sound-effects. I used no tests,because I was interested in their spontaneous language production.

The staff and houseparents of the school were very co-operative and helped me to get to know the children and carry out my work.

4)A note on the contents of this paper

a)Discussing aspects of'autism',I have found opinions concerning the meaning of this notion to vary considerably.Because of this general uncertainty about the use of the word and because of the absolute necessity to know as much as possible

about the overall functioning of the autistic child when one wishes to discuss one particular aspect of the whole picture, I will devote a first chapter to the description of the syndrome.

b)In a second chapter we will briefly glance at a few studies of language in autism.

c)A third chapter will outline the linguistic theory within which I wish to discuss the autistic child's communicative use of language.Here topics will include linguistic pragmatics,speech acts,conversation analysis.

d)After a classification of autistic children's linguistic abilities we will look at a long dialogue between a house-parent and an autistic boy.This will be analysed,and further examples of the use and understanding of language in autism will be discussed.

e)In a final chapter I will give a brief summary of my findings and then consider suggestions for further work in the fields of linguistic pragmatics,psychology and neurolinguistics. A note on the teaching of language to autistic children will conclude this paper.

II.EARLY CHILDHOOD AUTISM

1)Notes on the 'history of autism'

When discussing certain aspects of the autistic syndrome,one quite often hears comments such as,"This no doubt must be a pathological form of behaviour typical of our modern mass-society,where individuals no longer know how to communicate, and develop disturbed patterns of social interaction".
This is not so.In fact,it was only in 1943 that eleven children whose "condition differs so markedly and uniquely from anything so far" [1]

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[1] in Kanner,L.:Childhood Psychosis:Initial studies and new insights.Winston,Washington,1973;p.1.

were grouped together and classified as "autistic".
Long before this,in 1799,J.Haslam[1] of the Bethlehem Hospital in London,described the very unusual behaviour of a certain boy,without,however,giving it a label,and without making the diagnosis.Amongst other features Haslam noted that

> "he remembered many tunes and could whistle them.
> He always spoke of himself in the third person".[2]

And again in 1799,the "wild boy of Aveyron",who had been living in the woods for several years,was caught and taken to Paris.He was given to the physician J.M.Itard,who took a great interest in this child,looked after him and tried to teach him certain basic skills and social behaviour.This child never learnt to speak.Itard gives us many precise descriptions of the boy's behaviour,and also describes how he attempted to use new teaching methods,making use of the boy's specific obsessions and skills.[3] Nothing is known about the birth and the early childhood of this boy,but his later behaviour strongly resembles that seen in children with a history of early childhood autism.
In 1920 the disturbed behaviour of a young American boy was reported by L.Wittmer[4],who again described in detail the teaching methods he invented and used to help this child.
All three children showed the typical diagnostic features of what today is classified as "autism",but the authors of the reports did not conclude that their patients' behaviour constituted a separate syndrome.

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1) Haslam,J.:Observations on Madness and Melancholy.Hayden,London,1809.

2) in Wing,J.K.:"Kanner's Syndrome:A Historical Introduction" in Wing,L.(ed.),1976;p.4.

3) Itard,J.M.:"Mémoire et rapport sur Victor de l'Aveyron" in Malson,L.(ed.)Les Enfants Sauvages,U.G.E.,Paris,1964.

4) Wittmer,L."Don:A curable case of arrested development due to a fear psychosis in a 3year old infant" in Psychological Clinic,Philadelphia,1919-22,13;p.97.

Then, in 1943, L.Kanner's precise descriptions and case histories of eleven children were published[1], and at the same time, though quite independently, Asperger[2] also used the term "autistic" to describe the behaviour pattern of a certain number of children he had observed. Asperger's "autistic psychopathy" and Kanner's "early infantile autism" are two related conditions, but they are not identical[3].

2) Terminology

In most modern reports on children's abnormal behaviour "autism" is used to refer to an often expanded and modified version of Kanner's concept of the syndrome.

The term "autism" (from Greek autos:self) was used by Bleuler (1911) to describe a certain type of relationship which some schizophrenic adults have to reality:

> "This cutting themselves off from reality, together with the relative and absolute predominance of their inner lives, we call autism."
>
> and "The autistic world can be more real to them than reality."[4]

Bleuler later extended and generalised the term "autism" to include non-pathological behaviour in which a predominating introversion is noticeable.

The point here is that a person can normally realise and

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1) in Kanner, L. (1973); pp.1-45. This book is a collection of Kanner's papers dating from 1943-1973.

2) Asperger, H.: "Die 'Autistischen Psychopathen' im Kindesalter" in Archiv f. Psychiatrie und Nervenkrankheiten, Berlin, 1944, 117; p.76.

3) For a detailed analysis of the differences between the two conditions: cf. Bosch, G.: Infantile Autism, Springer, Berlin, 1970; pp.126-130.

4) Bleuler, E.: "Dementia praecox oder die Gruppe der Schizophrenien" in Aschaffenburg, G. (ed.) Handbuch der Psychiatrie, Deuticke, Leibzig, 1911.
cf. also Bosch, G. (1970); pp.45-46.

counterbalance flights into "autistic" thinking,whereas the schizophrenic is not always capable of distinguishing and then controlling the level on which reality is experienced. Kanner chose the term "autism" because this would signify what he considered to be the outstanding basic feature of the syndrome:a profound lack of affective contact with other people.The fact that the term "autism" has developed out of various concepts from Bleuler's theoretical work in the field of schizophrenia has had a rather confusing effect on the later understanding of its meaning in connection with childhood disorders.Often no clear distinction has been made between childhood autism and children's schizophrenia;autism has been considered as a preform of schizophrenia.Kanner himself was of this opinion[1].Today most researchers agree,however,that childhood autism and schizophrenia are not related syndromes. Leading researchers in the field of childhood disorders consider "early childhood autism" to be the best term,because it does not imply a detectable,inevitable onset of the syndrome from birth and

> "does suggest that the 'autism' is maximal in early life and may improve later"[2].

The term is also far more specific than other common labels such as "childhood psychosis" and "personality disorder".

3)Diagnosis

The basic features of the syndrome were initially described by Kanner as follows[3]:

a) " profound withdrawal from contact with people."

b) " an obsessive desire for the preservation of sameness."

(cont.on the following page)

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1) cf.Kanner,L.(1973);p.55.

2) Wing,L.:"Diagnosis,clinical description and prognosis" in Wing,L.(ed.) 1976;p.21.

3) (1949),in Kanner,L.(1973);p.51.

c) "a skillful and even affectionate relation to objects"

d) "the retention of an intelligent and pensive physiognomy"

e) "either mutism or the kind of language which does not seem intended to serve the purpose of interpersonal communication".

Talking about the children, Kanner also said[1],

> "[they]..are all unquestionably endowed with good cognitive potentialities."

It has been argued that although these points appear to be very clear, it is nevertheless quite difficult to use them as definite diagnostic criteria. There are several weaknesses in this summary:

a) Some of the statements are interpretations of behaviour or attitudes, not descriptions.

b) The notion of "intelligence" has been studied and re-interpreted considerably over the years and conceptions common in Kanner's time are no longer valid. It is certainly a mistake to conclude the existence of a good cognitive potential from feats of memory in areas of interest and from certain mechanical skills[2]. The autistic behaviour pattern can also be found in children with various degrees of mental retardation in all areas of functioning.[3]

c) Some autistic children are not socially withdrawn or else they lose this feature with time.

d) Weber[4] has shown that the clinical picture of early childhood autism continuously changes with increasing age.[5]

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1) Kanner, L. (1943) in K., L. (1973); p. 39.

2) cf. Kanner, L. (1956) in K., L. (1973); p. 93.

3) cf. Wing, L. (1976, a); p. 18

4) Weber, D.: Der frühkindliche Autismus, Huber Verlag, Bern, 1970

5) Kanner's point about language applies to a large majority. One should not, however, disregard the fact that there is a small group of autistic children whose command of grammar is very good and who will engage in a rigid conversation-like interaction. Some children do make use of language to attempt some sort of communication.

e) The observation of autistic children older than six or seven will also show that the prominent features of social withdrawal from contact and desire for the preservation of sameness are likely to diminish. The enormous problems in the creative use and the understanding of language, however, seem to be the most persisting impairments.

Over the years various attempts have been made to break away from the defining criteria suggested by Kanner, which proved to be too narrow a framework. Theoretically it might be interesting and possible to group together children who fit Kanner's description precisely. In practice, however, when considering education and management, a broader interpretation of the term "childhood autism" was needed. Kanner had excluded from his syndrome children with apparent neurological abnormalities. This proved to be an unfortunate concept, as such abnormalities can and certainly have often become apparent in later childhood. Epilepsy, for example, will frequently (in 30% of the children classified as autistic) occur only in adolescence or later[1]. What tends to make the diagnosis of early childhood autism rather difficult is the fact that

a) every single feature described and listed by Kanner and other researchers can also occur on its own or combined in various forms with other features.

b) the diagnosis cannot be made on the basis of the occurrence of one single symptom.

c) every single characteristic feature of autism can also occur in various other syndromes[2].

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1) cf. Wing, L.: "Problems of Diagnosis and Classification" in Everard, M.P. (ed.) An Approach to Teaching Autistic Children, Pergamon, Oxford, 1976; p.4.

2) cf. Wendeler, J.: "Neuere Forschungsergebnisse" in Wing, J.K. (ed.) Der frühkindliche Autismus (German translation, revised edition), Beltz, Weinheim a. Basel, 1973.

It has been suggested that there is a small nucleus group of children who show a clear picture of Kanner's syndrome, the borderlines of which,however,cannot be clearly drawn. Thus the nucleus group

> "shades into a personaliy that is untalkative,unsociable and pedantic, but within the normal range and,at the other extreme,into certain forms of severe mental retardation"[1].

The problems involved in the diagnosis of autism have been dealt with in two ways: a)rather long lists of criteria have been put forward and a decision made as to how many of these had to be met with in order to diagnose autism.Creak[2] suggested a nine-point scheme,O'Gorman[3] presented a revised version,Clancy et al.[4] presented fourteen points.But the application of these forms would not lead to one definite concept of autism.It is also clear that they present a wider interpretation of the syndrome than Kanner's or Asperger's[5]. Newson[6] argues that such lists (as pointed out by M.Rutter[7]) fail to suggest that some points are of greater importance than others,that "some points are more indicative of autism than others" (Newson's italics).
So,working with these lists,even if the necessary number of

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1) Wing,L.(1976,a);p.18.

2) Creak,E.M.:"Schizophrenic syndrome in childhood:progress report of a working party" in Cerebral Palsy Bulletin,London,1961,no.3;p.501.

3) O'Gorman,G.:The Nature of Childhood Autism,Butterworths, London,1970.

4) Clancy,H./Dugdale,A./Rendle-Short,J.:"The diagnosis of infantile autism" in Developmental Medicine and Child Neurology,London,1969,11;p. 432.

5) cf.Bosch,G.(1970);pp.120-126, and Wing,L.(1976,a);p.21.

6) Newson,E.:"Diagnosis and early problems of autistic children" in Communication (NSAC),London,1977,XI,Sept;pp.43-48.

7) M.Rutter is a psychiatrist at the Maudsley Hospital in London.His work includes research in the field of autism and other childhood disorders.

criteria are met,one might still find the major characteristics (language impairment,social disorder,ritualistic phenomena) missing.Newson stresses the importance of the necessary presence of the interaction of the different parts of the syndrome,which again would not follow from the type of procedure mentioned under a) :

> "Every kind of impairment in autism has links with the other impairments.They all overflow into each other and it is the interaction between the different parts of the syndrome which is most characteristic of autism." [1)]

b) One can also describe several symptoms,all of which must be present if a child should be diagnosed autistic.It has been suggested by M.Rutter[2)]

> "that the diagnosis of autism should be restricted to cases in which there is an onset before thirty months,and then a disorder involving firstly an autistic type of failure to develop inter-personal relationships;secondly,a delay [3)] in speech and language development and,thirdly,ritualistic and compulsive phenomena".

It is essential to acquire a long-term perspective of all areas of the child's functioning.It can be quite startling to meet a rather affectionate and lively child and to be told that he or she is autistic.As mentioned above,the

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1) Newson,E.(1977);p.44.

2) M.Rutter is quoted by Newson (1977);p.44.

3) note:Apparently Rutter agreed with Newson's suggestion that "delay" is a misleading term and should be replaced by "impairment",because there are a few autistic children who start to talk very early,although not in communicative interaction."Delay" might come to mean that language develops quite normally but simply late.This is wrong.

picture of early childhood autism changes with increasing age;the typical features are usually most prominent between the age of 2 1/2 and 5 years.

To give an overall picture of the typical pattern in early childhood autism,a "list of the characteristic impairments, special skills and behaviour problems upon which a descriptive diagnosis can be based" [1] will be presented,which L.Wing published in 1976.All the different features of behaviour are commonly found in autistic children,but rarely does one child show all at the same time:

A.Basic problems
1.Problems affecting language and communication
a)Spoken language
*i)Problems in comprehension of speech.
*ii)Abnormalities in the use of speech.
*Complete absence of speech (mutism)OR,in those children who do speak:
*Immediate echolalia.
*Delayed echolalia.
*Repetitive,stereotyped,inflexible use of words and phrases.
*Confusion over the use of pronouns.
Immaturity of grammatical structure in spontaneous (not echoed) speech.
*iii)Poor control of pitch,volume and intonation of the voice.
*iv)Problems of pronunciation.

b)Non-spoken language and non-verbal communication
*i)Poor comprehension of the information conveyed by gesture,miming,facial expression, bodily posture,vocal intonation,etc.
*ii)Lack of use of gesture,miming,facial expression, bodily posture and vocal intonation to convey information.

*Items essential for a diagnosis of autism as described by Kanner (1943.cf.Kanner 1973;pp.1 ff.).

[1] Wing,L.(1976,a);pp.49-52.

2. Abnormal responses to sensory experiences (indifference, distress, fascination)

i) Abnormal responses to sounds.
ii) Abnormal responses to visual stimuli.
iii) Abnormal responses to pain and cold.
iv) Abnormal responses to being touched.
v) "Paradoxical" responses to sensations.

3. Abnormalities of visual inspection

i) The use of the peripheral rather than central visual fields.
ii) Looking at people and things with brief flashing glances rather than a steady gaze.

4. Problems of motor imitation

i) Difficulty in copying movements.
ii) Muddling right-left, up-down and back-front.

5. Problems of motor control

i) Jumping, flapping limbs, rocking and grimacing.
ii) A springy tip-toe walk without appropriate swinging of the arms.
iii) An odd posture when standing, with head bowed, arms flexed at the elbow and hands drooping at the wrist.
iv) Spontaneous large movements, or fine skilled movements, or both, may be clumsy in some children though others appear to be graceful and nimble.

6. Abnormalities of autonomic function, vestibular control and physical development

i) Erratic patterns of sleeping and resistance to the effects of sedatives and hypnotics.
ii) Erratic patterns of eating and drinking, including consumption of large quantities of fluid.
iii) Lack of dizziness after spinning round.
iv) Immaturity of general appearance and unusual symmetry of face.

B. Special skills

*1. Skills that do not involve language

These include music, arithmetic, dismantling and assembling mechanical or electrical objects, fitting together jig-saws or constructional toys.

*2. An unusual form of memory

The ability to store items for prolonged periods in the exact form in which they were first experienced.

C.Secondary behaviour problems

*1.Apparent aloofness and indifference to other people, especially other children

*2.Intense resistance to change,attachment to objects and routines or a repetitive,uncreative interest in certain subjects.

*3.Inappropriate emotional reactions

*4.Lack of imagination

a)Lack of imaginative play or creative activities.
b)Attending to minor or trivial aspects of people or objects instead of attending to the whole.
c)Absorbtion in repetitive activities,stereotyped movements,self-injury,etc.

5.Socially immature and difficult behaviour [1)]

An inexperienced observer will often find it quite difficult to discover the common element in the numerous forms early childhood autism can take.From my own experience I know it to be rather puzzling to see twenty autistic children aged 9 to 17 in the playground,no two of which appear to be alike. At one extreme there will be the youngster who comes up to you and asks questions,albeit in a rather impersonal and rigid manner.At the other extreme there will be the child who just sits in a corner,never says a word,shows no interest whatsoever and,because of his or her overall impairment,is cut off from every social contact.

4)Notes on the aetiology of autism

Many different theories have been put forward to explain the origins of early childhood autism.They cover the whole range from rather hazy speculations about factors in the child's psychological surroundings and the emotional state of the child to 'brain damage'.

Two basic approaches can be distinguished -theories which,as a basic cause,postulate abnormalities of the psychological

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1) This list is taken from Wing,L.(1976,a);pp.49-52.

environment and theories which postulate organic disturbances. Discussing the background of autistic children,Kanner described their parents as highly intelligent,but

> "cold,humourless perfectionists"[1].

He also states explicitly,

> "At no time have I pointed to the parents as the primary, postnatal sources of pathogenicity."[2]

Kanner preferred instead an explication on the lines of an

> "interaction between an innate 'organic' defect and a particular family environment"[3].

But quite a few speculations were made,especially in the fifties and sixties,which suggested that autism was the result of psycho-dynamic influences in the parent-child relationship.Much (partly anecdotal) material was collected about the individual parents.And some authors (Bettelheim 1967[4],Tustin 1972[5]) thought the roots of autism to lie in the child's experiencing

> "severe early stress,such as parental rejection,separation or depression"[6].

None of these speculations about abnormalities of the psychological environment have really been confirmed by experimental evidence.Recently,after a minute and thorough investiga-

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1) Kanner,L.(1954)in K.L.1973;p.74.

2) Kanner,L.(1968)in K.L.1973;p.138.

3) Cox,A./Rutter,M./Newman,S./Bartak,L.:"A Comparative Study of Infantile Autism and Specific Developmental Receptive Language Disorder:II.Parental Characteristics" in British Journal of Psychiatry,London,1975,126;p.146.

4) Bettelheim,B.:The Empty Fortress,Free Press,New York,1967.

5) Tustin,F.:Autism and Childhood Psychosis,Hogarth Press,London,1972.

6) cf.Cox,A./Rutter,M./Newman,S./Bartak,L.(1975,II);p.146.

tion,which took into account such factors as

> "Parental warmth,emotional demonstrativeness/responsiveness,...,sociability,parental psychiatric disorder,..., early stresses of any kind" ,

researchers concluded that

> "it is unlikely that autism develops as a consequence of such parental personality attributes" [1].

Aetiological theories based on organic pathology have included discussions of genetic abnormalities,damage of the central nervous system,sub-cortical lesions,dysfunction of the vestibular system or the reticular system,retardation of maturation and biochemical abnormalities.Much of this work is very difficult to evaluate and results can only be generalised with great caution. L.Wing concludes that

> "it seems likely that many different organic conditions can give rise to autistic behaviour,perhaps because they sometimes,by chance,involve a specific area of the brain or disturb a specific brain function." [2]

In addition to the search for a possible primary basic cause, researchers have been concerned with the definition of the impaired psychological and psycho-physiological functions. These include abnormalities of emotional and cognitive development,of perception and attention,of language and the use of symbols.It is this particular area which has most recently attracted the attention of researchers[3].

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1) Cox,A./Rutter,M./Newman,S./Bartak,L.(1975,II);p.157.

2) Wing,L.:"Epidemiology and theories of aetiology" in Wing,L.(ed.)1976;p.92.

3) cf.op.cit.;pp.72-92.

5) Notes on differential diagnosis

We shall only mention two childhood disorders, certain features of which resemble patterns seen in early childhood autism. The focus of comparison will be the children's language disorder.

a) Developmental receptive language disorder: This is the only form of impaired language processing we shall concern ourselves with here. It is found in a very small minority of children who show no signs of neurological disorder, mental defect or distortion of the psycho-social environment. They suffer from a severe impairment of language comprehension. The exact nature and cause of this "developmental receptive language disorder" is not known.

It is of interest here because especially children under the age of five show certain behaviour patterns and social abnormalities which resemble those of young autistic children. In a detailed comparative study of the two disorders[1], it was found that the language of autistic children appears to be much more deviant and delayed :

> "undue sensitivity to sound, echolalia, pronominal reversal, metaphorical language and inappropriate remarks"[2] .

The understanding of language, the ability to use "inner language", the use and understanding of gesture and miming and the understanding of written language were all found to be much more severely disturbed in autistic children. In a social context they also tended to make much less use of whatever specific language skills they had. So far this characteristic failure has not yet been explained. Children

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1) Bartak, L./Rutter, M./Cox, A.: "A Comparative Study of Infantile Autism and Specific Developmental Receptive Language Disorder: I. The Children" in British Journal of Psychiatry, London, 1975, 126; pp. 127-145.

2) op.cit.; p. 139.

suffering from developmental receptive language disorder, however,had much more severe articulation problems.

b)Childhood schizophrenia: Although the labels "childhood autism" and "childhood schizophrenia" have often been used interchangeably,the two syndromes must be clearly distinguished.Such a distinction is to be based on the evidence of the child's history and present behaviour pattern. One important factor is the time of onset.The signs of early childhood autism appear in the first thirty months;schizophrenia only becomes noticeable in older children,never before the 36th month.Schizophrenic features such as delusions or hallucinations do not occur in early childhood autism.A well defined concept of hallucination is necessary because one can now and again see autistic children who mutter to themselves and wave their arms,as if to tell an invisible interlocuter to go away.Lay people sometimes interpret this kind of activity as a form of hallucination.A closer investigation of such behaviour,however,shows that the child is not experiencing delusions of the sensory modalities,but is rather re-enacting an earlier event and echoing the phrases heard at that time[1].

Forms of language deterioration,reduction of verbal communication,grammatically and syntactically abnormal language, occasional delayed echolalia,"senseless" playing with words, and mutism may be observed in childhood schizophrenia,but if the autistic and the schizophrenic children are compared in detail,characteristic differences will become evident[2].

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1) For a good account of hallucinations see Finke,J.:"Halluzination" in Lexikon der Psychiatrie,ed.by Müller,Ch.,Springer,Berlin,1973.

2) cf.Strunk,P.:"Der Formenkreis der endogenen Psychosen" in Harbauer,H./Lempp,R./Nissen,G./Strunk,P.(ed.) Lehrbuch der speziellen Kinder- und Jugendpsychiatrie,2nd ed.,Springer,Berlin,1974;see pp.399 and 404.
cf.also Wing,L.(1976,a); pp.37-38.

6) Notes on prognosis

Kanner has discussed the follow-up study of the eleven patients he initially diagnosed in 1943[1]. He says that the results

> "invite serious curiosities about the departures from the initial likeness ranging all the way from complete deterioration to a combination of occupational adequacy with limited, though superficially smooth social adjustment;"[2]

he adds that even with the full knowledge of all factors

> "it would have been impossible for anyone to predict this outcome"[3].

Improvement was rare and most cases did not show any positive development. Other follow-up studies have been made elsewhere and researchers have tried to establish factors relevant for the prognosis. IQ-results obtained in early childhood by a very experienced person, even if these are based on only a few subtests, appear to indicate reliably a prognosis of the outcome. If a child still lacks useful speech by the age of five and shows only minimal response to sound, the prognosis is very poor. This is the only single item which correlates well with the outcome. Other factors such as the overall severety of the impairments, educational help, etc. must also be taken into account. Generally there is little hope for substantial improvement and most autistic children

> "will remain dependent all their lives"[4].

This of course does not mean that autistic children cannot

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1) cf. Kanner, L. (1973); pp. 161 ff.
2) op.cit.; p.186.
3) op.cit.; p.189.
4) Wing, L. (1976, a); p.48.

benefit from special education.A structured educational programme will help the children a lot.Depending on already developed intellectual abilities,progress will be made in behaviour and social responsiveness,the acquisition of skills and in some cases in traditional subjects like reading,writing and number work[1].

III.STUDIES OF LANGUAGE IN EARLY CHILDHOOD AUTISM

Language impairment has come to be recognised as a fundamental feature of autism.This is not a simple delay of speech but a severe disturbance of the child's functions of coding and decoding,of understanding the meaning of utterances in changing contexts and social situations,of using language creatively and for reflective and communicative purposes. Quite a few articles,reports and studies of the autistic child's language have been published.We shall glance briefly at a number of these which have dealt with the subject in different ways.We will also summarise some of their findings, so as to gain a more complete picture of the language impairment in early childhood autism.

One of the first accounts of these children's speech was written by Kanner in 1946[2]:"Irrelevant and metaphorical language in early infantile autism".Kanner observed the language production of twenty-three children and described some semantic features of their language in detail.He noticed that autistic children quite often utter,in addition to frequent delayed echolalia,words or whole sentences which strike the listener as totally "irrelevant" to the situation.Only when the opportunity is given to retrace these utterances to their origins can their meaning be understood.They do assume

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1) cf.Bartak,L./Pickering,G.:"Aims and Methods of Teaching" in Everard,M.P.(ed.)An Approach to Teaching Autistic Children,Pergamon,Oxford,1976.

2) in Kanner,L.(1973);pp.45-50.

meaning but,because they do not fit into the logical structure of the conversation and the expectations of the interlocuter,they cannot be understood immediately.The autistic child will often link a certain utterance with his or her experience of a specific and concrete situation.The connection between the utterance and the experience is a totally personal and individual one,and the listener is unable to know which experience or event the word represents to the child. Kanner's paper is mainly concerned with defining and illustrating these "seemingly irrelevant and nonsensical utterances" which he calls "metaphorical expressions". He also shows the difference between metaphors in poetry and in autism,and explains how meaning is transferred in autism: by substitutive analogy,by generalisation,or by restriction.

In "Infantile Autism"[1] Bosch describes in detail the history, behaviour and language of five autistic children.It is the aim of his phenomenological-anthropological study to show, using language as a guide,the "particular mode of existence of an autistic child".Bosch outlines the basic conditions under which a human encounter,"meeting",takes place,and, implicit in this,the origins of one's own world -the world for oneself- and the common world -the world shared with others.The pre-conditions of a world in which an encounter takes place,the way in which this intersubjective,common world constitutes itself are examined,based largely on the work of the philosopher Husserl.
After an initial period of oneness,of being unseparated,the process of distinguishing between self and non-self gradually begins.The young child starts to step out of the initial all-embracing symbiosis,starts to become aware of itself as being separated from its surroundings,from its mother,other people and things.By this process one's own world and the world shared with others is constituted.Only then does the indivi-

[1] Bosch,G.: Infantile Autism,Springer,Berlin,1970.
The first edition was published in German:
Der frühkindliche Autismus,Springer,Berlin,1962.

dual become able to experience encounter and confrontation. Bosch believes it possible to observe and interpret the progressive constituting of the personal and the common context of experience and thus the forming of self in the autistic child by examining the development of its language.According to Bosch,the autistic child is embedded in the initial form of symbiosis with its mother and attached to the immediate environment for a much longer period than the normal child. The autistic child does not come to the realisation of its being a separate entity;it does not grow out of the symbiosis. That new form of relating,the experience of "meeting",develops only in a rudimentary form and very late.
Bosch tries to show that the basic autistic disturbance of the child's experience of self and others is manifested in its language.Using the works of K.Bühler[1] and B.Snell[2],Bosch describes the structure and function of language in encounter-situations as it is represented in grammatical constructions.He examines Snell's basic categories of meaning: 'acting','having','being' as to their occurrence in the speech of autistic children.He observes that

> "the forms that appeared late or not at all in autistic children were precisely those in which normally the meaning of 'acting' and 'having' is particularly predominant,i.e.those forms that can only develop if and when the child experiences these meanings"[3].

Expressions of'possessive having'(possessive pronouns, possessive genitive) appear very late,the reference structure of 'having' is not fully developed.The ability to acquire and keep property,the awareness of self and others,of one's own property,that of others and of shared common objects has

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[1] Bühler,K.:Sprachtheorie,Fischer,Jena,1935.
[2] Snell,B.:Der Aufbau der Sprache,Claasen,Hamburg,1952 .
[3] in Bosch,G.(1970);p.115.

not been realised with the structures language offers to express 'having'[1].

'Acting' is seldom fully represented.The use of "I" is delayed,the imperative and the expression of an intended action (I+future)have receded.The use of linguistic forms for addressing someone and for deixis as the announcement of something,is limited and rudimentary,as these forms require a perspective shared by speaker and listener.The development of question and answer,too,is missing or delayed.

Constant repetition of the same questions,demanding unchanged answers,is often used by the autistic child to assure itself of the uninterrupted sameness of the world.

The forms of 'being' are most evident in imitation.Imitation of sound or movement copies what already exists and is not meant to express one's own state or to act on others.Examples of linguistic forms representing the meaning of 'being'are:

a)of the individual word classes,the substantive or the substantivised verb representing the result of action;

b)of the verb tenses,the past tense;

c)of the persons,the 3rd person;amongst genera verbi,the passive.

All the forms of pre-verbal and verbal imitation and representation are predominant in the language of the autistic child,whereas the expression of 'acting' and 'having' is very poorly developed.

Bosch illustrates his theory with detailed linguistic material from his patients.He attempts to interpret their verbal behaviour within an existential phenomenological frame which is intended as an aid to understanding the autistic child's mode of existence.He succeeds to a certain extent in drawing an overall picture,but the reader is left with a slight feeling of uneasiness:Bosch's definitions and descriptions

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[1] in Bosch,G.(1970);p.79.

are strongly influenced by the terminology of phenomenological philosophy.The reader is left with the impression that the autistic child's behaviour is overinterpreted in terms of the philosophical framework.

In "The Siege"[1] C.C.Park,a mother of an autistic child,tells the story of her daughter's first eight years of life.She closely observes and carefully describes all aspects of the child's behaviour and includes many notes on the acquisition and use of words and phrases.In one section called "Towards Speech:a long,slow chapter",the first appearance of words, their first combinations,the gradual expansion in scope and usefulness of language,and how the members of the family intervened and "taught" her to use words,are described in great detail.This account is especially interesting because the child is observed in her family-surroundings over such a long period.

D.M.Ricks and L.Wing[2] have described the whole range of communicative impairment,verbal and non-verbal,seen in early childhood autism.This is a very detailed account and interpretation of the development,use and understanding of language, communication and "inner language" (a term coined by L.S.Vygotsky[3]) in normal and autistic children.
Because early childhood autism is very seldom diagnosed before the age of 24 months,the earliest pattern of behaviour has not been observed systematically;evidence is only retrospective.One typical feature is the lack of responsiveness to the mother's verbal or gestural attempts to interact with the

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1) Park,C.C.:The Siege,Colin Smythe,Gerrards Cross,1968.

2) Ricks,D.M./Wing,L.:"Language,Communication and the Use of Symbols" in Wing,L.(ed.),(1976).

3) Vygotsky,L.S.:Thought and Language,M.I.T.Press,Cambridge, Mass.,1962.The first edition (Russian) was published in 1934.

child.One study (Ricks 1972[1]) showed that apparently autistic children (aged 3 to 6,not yet using sound-labels or words) can give expression at least to certain emotions, namely:requesting,frustration,greeting,pleased surprise.They do this,however,in a personal idiosyncratic way.Their expressive noises appear to be quite different from those found in normal children.They do not resemble those produced by mentally retarded children,either.

Autistic children have great difficulty in understanding facial expressions.They themselves will often have an expressionless appearance and show only the extremes of emotion.Non-verbal behaviour must be learnt by rote.Older children seem to develop idiosyncratic expressions of emotions.

Gesture is very rarely understood and not used as a substitute for speech.Understanding of gesture tends to improve, but the use of it changes very little.

Apart from the lack of facial expression,hand movements and bodily posture,the sound of the voice (intonation,volume, pitch) is also rarely used to convey information.

So the understanding of all forms of non-verbal communication is impaired.The adequate use of the innumerable social clues expressed non-verbally is a task which even those autistic children who have progressed most find extremely difficult.

Ricks and Wing also discuss the development of speech.Again, much of the evidence here is retrospective.Autistic children may begin to utter words at almost any age.Some will never learn to speak at all and will remain mute.Those who learn to say words will usually have started to do so by the age of five.

One outstanding feature in the young autistic child is the apparent lack of joy and enthusiasm in producing sounds. The first and in some cases the only speech ever acquired,

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[1] Ricks,D.M.:The Beginning of Verbal Communication in Normal and Autistic Children. M.D.Thesis,London,1972.

will often be a meaningless echoing of words.This tends to be a disinterested,parrot-like echolalia,immediate or delayed. Usually these words do not relate to the child's activity and do not represent "an aspect of imaginative play" [1]. Some autistic children will learn to use appropriately certain phrases copied from other people.These tend to be utterances which the child has heard in specific situations and now associates with these specific events or objects.
The utterances of those children who produce spontaneous speech,in addition to or replacing echolalia,are often immature and show abnormalities of grammatical construction.
A tendency towards the contraction of phrases and words is noticeable.A small number of autistic children eventually learn to use grammar correctly.But their conversation tends to be extremely concrete,pedantic,computer-like and focussed on subjects of interest,without creative and flexible handling of the language.
Ricks and Wing also discuss the lack of "inner language", "speech for oneself",an aspect of the function of language described by Vygotsky[2].The authors consider the poverty or lack of "inner language" to be evident in the autistic child's failure to play imaginatively,to plan for the future,to enjoy fiction.The authors discuss the theoretical implications of these features of language and communication in early childhood autism and compare the pattern with the normal and with the mentally retarded child's functioning.
This is a detailed,precise and very informative article written by medical doctors and based on a great deal of experience with autistic children.

In his book "Language of Autistic Children"[3] D.W.Churchill presents results of research conducted during more than a

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[1] Ricks,D.M./Wing,L.(1976);p.116.

[2] cf.footnote no.3,p.27.

[3] Churchill,D.W.:Language of Autistic Children,Winston&Sons, Washington,D.C.,1978.

decade at a special centre for early childhood disorders in the USA.

An experimental "9-Word Language" was used to evaluate the language abilities of 14 children,11 of whom had been diagnosed autistic.The elements of this artificial language, an interesting and unconventional testing method,are:

3 nouns,represented by 3 blocks,3 sticks and 3 rings;
3 adjectives,represented by the colours red,blue,yellow;
3 verbs,represented by the actions 'tap','slide','give'.

These nine words are signified either vocally or by special hand signs.This language-system was developed in order to enable a detailed and precise identification of those

> "points at which children failed to develop functional language"[1].

The 9-Word Language was used to

> "examine the basic conditionability of auditory and visual input channels and speech and motor output channels,as well as the connections between these,the ability to generalize beyond particular stimuli to classes of stimuli,and to cross-reference"[2].

The main part of "Language of Autistic Children" consists of very detailed accounts of the individual children's linguistic abilities and impairments as expressed in their work with the 9-Word Language.From these minutely described case studies the author draws a number of general conclusions.I should like to cite one of his most interesting statements:

> "..stable,patterned responding was observed not only when a child had 'learned' a task but also when he was 'working at it' but still making many errors. ...
> The most interesting information may be derived from a close

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1) Churchill,D.W.(1978);p.12 .
2) op.cit.;p.11.

(") . scrutiny of stable error patterns.Thereby it often could be inferred that a child was operating according to a recognizable 'strategy'.His errors were not ordinarily random and chaotic.An autistic child,working comfortably within the confines of the 9WL,was not unpredictable and 'out of contact'."[1)]

One case study includes the transcription of a dialogue which clearly illustrates an autistic boy's problems with the use of pronouns.

Several articles have been published in which details of the language impairment in autism are examined:

L.Bartak and M.Rutter[2)] have tested the use of pronouns. The failure to produce "I" and the reversal of pronouns are well known features of autism and have given rise to all sorts of interpretations:a rejection of one's existence,a failure to differentiate between self and others,a failure to participate in a bi-polar interaction[3)].Bartak and Rutter conclude from their tests that the missing "I" is a result of a coincidental combination of the autistic child's typical word order and of the tendency to echo the last part of what has been said.There is in fact a high correlation between pronoun reversal and echolalia.This tendency to echo can again be used to teach the use of "I".[4)]
This again shows how important it is not to overinterpret

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1) Churchill,D.W.(1978);p.21.

2) Bartak,L./Rutter,M.:"The Use of Pronouns by Autistic Children" in Journal of Autism and Childhood Schizophrenia,Washington, 1974,vol.4,no.3;pp.217-222.

3) e.g.Bosch,G.(1970);Bettelheim,B.(1967).

4) cf.Ricks,D.M./Wing,L. (1976);p.111.

single items of behaviour and attribute fundamental significance to them before their occurrence has been examined in wider contexts.[1)]

G.Bartolucci and R.J.Albers[2)] have examined the autistic child's use of deictic categories in language.They have demonstrated that performance is particularly poor when the verbal expression of deictic,time related aspects,such as the use of past tense markers,is required.

This brief discussion of a number of studies concerned with the autistic child's language helps to demonstrate that further extensive investigation of all different aspects of language and communication is needed.Only by thus putting together the stones into a mosaic can a realistic insight be gained into the nature of the linguistic,cognitive and communicative functioning of the child.
In the studies we have looked at,many examples of typical phrases and words have been given,but practically nowhere have whole sequences of verbal interaction in free,informal communication been presented.This can be explained partly by the fact that a large majority of autistic children reduce their answers to an absolute minimum,to "yes" or "no",or simply echo the last words addressed to them,or do not react at all.Another reason is that their language has often been observed in test-situations where the children found themselves in unusual surroundings,had to encounter new faces and voices and were conscious of the fact that their behaviour was of interest to someone.Autistic children tend to react quite differently to different people,and this includes their verbal behaviour.

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1) For an illustration of the autistic child's difficulties with the use of pronouns see Churchill,D.W.(1978);pp.78ff.

2) Bartolucci,G./Albers,R.J.:"Deictic categories in the language of autistic children" in J.of Autism and Childhood Schizophrenia,Washington,1974,vol.4,no.2;pp.131-142.

To interpret the term "autistic"(when discussing early childhood autism) to mean an exclusion of all verbal and communicative initiative would be a serious,though,in the author's experience,quite common error.Some autistic children will start the verbal interaction with the non-autistic adult and are quite willing to engage in a conversation-like activity for a while.This probably applies more to the older children. They do not necessarily belong to the small group with good command of grammar and good understanding of language.
As mentioned above,much interest has recently come to be focussed on the autistic child's cognitive,linguistic and communicative functioning.In all children these areas are of course interlinked from the very beginning,from birth or before.Communicative interaction with constant exchange of signals is very intensive between the mother and her baby. Only recently have researchers become aware of the importance and the high degree to which the normal baby is an active,contributing partner in this interaction[1].Such pre-verbal and verbal interaction is extremely precise,rapid and tightly meshed.These communicative acts of the very first months develop into the highly complicated system of human communication with its numerous means of intentional and non-intentional exchange of information.
It has been suggested very recently (Newson 1977) that this earliest communicative interaction between mother and autistic baby,this rapid exchange of signals,is disturbed because the child's inadequate coding system distorts the meaning of the incoming signals.This implies that the damage is there right from the beginning.The terrible consequences for the development of the child's communicative functioning and its understanding of its surroundings are obvious.The

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[1] cf.Grimm,H.:Psychologie der Sprachentwicklung,Kohlhammer, Stuttgart,1977,vol.I;pp.50-52.

study of the autistic child's very earliest behaviour would seem to yield a lot of important information.But how is the poor researcher to know in advance which four or five out of ten thousand new-born babies will develop the autistic syndrome?This is the age-specific prevalence of early childhood autism[1].There is also a need for more detailed information about the older children.

I believe it to be absolutely necessary for more observation and analysis of the interactional patterns of the autistic child with other people to be undertaken (and published), i.e. entire sequences of verbal and non-verbal "conversation-patterns",including the non-autistic partner's activity and reactions,the situational context and the social relation between the interlocutors,must be analysed.

IV.THE THEORETICAL FRAMEWORK OF THIS STUDY

We shall be concerned with a particular aspect of the autistic child's functioning :its communicative intentions.We are interested in the types of intentions expressed,the means by which they are expressed and also in the clues and information given which allow the interlocutor to interpret and understand the child's intentions.What does the child wish to communicate?How does he/she make use of language to achieve his/her goal and how can the listener know the content and purpose of the communicative act?
We will now outline the framework within which the discussion of autistic children's communicative intentions will take place.We are concerned with the use of language,with utterances produced in an actual social context and with their reception by a listener.The purpose of these is to influence the speaker's environment,to change the world around him so that it may suit the speaker's interests,or to reassure him-

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[1] cf.Wing,L.(1976,b);p.71.

self of the fact that the world has not changed.This latter motive often underlies the endless stereotype questions of autistic children.

If we assume that the partners in linguistic interaction share a certain range of basic experience and knowledge of the world,and,by the use of elements of a linguistic system for their communicative interaction,can refer to this very general,shared world (of reference),then three important aspects of the interaction must be considered:

a) the speaker's intentions

b) the way his utterances are related to and determined by the actual context

c) both interlocutors' conversational skills.

The functions of these notions and the means by which they determine the patterns of interaction are dealt with in linguistic pragmatics.

1) Linguistic pragmatics

The founder of American pragmatism and the first to incorporate pragmatic components into a theory of semiotics was Charles S.Peirce (1839-1914)[1].In works like "The Fixation of a Belief"[2],"How to make Our Ideas Clear"[3],"Lectures on Pragmatism"[4] and others,Peirce,an outstanding logician, mathematician and scientist,developed a conception of pragma-

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1) Peirce,Ch.S.: The Collected Papers of Ch.S.Peirce vol.I-VI,ed.by Hartshorne,Ch./Weiss,P.,Harvard University Press,1934/35 vol.VII-VIII,ed.by Burks,A.W.,Harvard U.P.,1958.

2) Peirce,Ch.S.: "The Fixation of a Belief"in The Popular Science Monthly,New York,1877,12;pp.1-15.Also in Collected Papers,vol.V.

3) Peirce,Ch.S.: "How to make Our Ideas Clear"in The Popular Science Monthly,N.Y.,1878,12;pp.286-302.Also in Collected Papers,vol.V.

4) Peirce,Ch.S.: "Lectures on Pragmatism" in Collected Papers, vol.V.

tism which strongly influenced later research in epistemology and semiotics.Peirce considered pragmatism to be

"a maxim of logic" [1].

He wrote: "In order to ascertain the meaning of an intellectual conception one should consider what practical consequences might conceivably result by necessity from the truth of that conception;and the sum of these consequences will constitute the entire meaning of the conception."[2]

In his later works the concept of semiotics is further developed and this theory of signs becomes the fundamental discipline upon which a)the study of logic and b)the philosophic conception of pragmatism are based[3].

The best known explication of the term "pragmatics",however, is derived from Charles W.Morris' work on semiotics.In 1938[4] Morris defined the subject to be described in "pragmatics" as " the relation of signs to their users". He defined that of "semantics" as "the relation of signs to the objects to which the signs are applicable" [5] and that of"syntactics" as the "formal relations of signs to one another".

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1) in The Collected Papers of Ch.S.Peirce,vol.V:18.

2) in op.cit.,vol.V:9.

3) cf.Walther's introduction to Ch.S.Peirce:Lectures on Pragmatism;Vorlesungen über Pragmatismus,ed. by Walther E., F.Meiner Verlag,Hamburg,1973.

4) Morris,Ch.W.:Foundations of the Theory of Signs,University of Chicago Press,Chicago,1938. cf.p.6.

5) To define the actual relation between the elements of a language and the objects or concepts or whatever else they denote,is a crucial problem of semantic theory.An explication of semantics must account for both "reference"(relationships between linguistic elements and the non-linguistic world of experience) and "sense" (which refers to the intra-linguistic relations of meaning).Cf. Palmer,F.: Semantics.A new outline,Cambridge Univ.Press,Cambridge,1976.

This first outline of semiotic relations was received critically. In 1946[1] he re-formulated his theory and now gave the following definitions:

pragmatics: "that portion of semiotic which deals with the origin, uses and effects of signs within the behavior in which they occur"

semantics: "...deals with the signification of signs in all modes of signifying"

syntactics: "...deals with combinations of signs without regard for their specific signification or their relation to the behavior in which they occur" .

His new theory offered a wider, behaviouristic framework for semiotics, but was still considered to be lacking in certain respects[2].

Today the term "pragmatics" is used in many different contexts. Its epistemological status has not been clarified. For our present purpose the study of "linguistic pragmatics" is most relevant. Several different branches of science have contributed over the years to what today emerges as the (still rather unclear) notion of "linguistic pragmatics":

a) Marxist theories (e.g. Leontiev; Maas)
b) American pragmatism (Peirce; Morris)
c) logical empiricism (Vienna Circle; Carnap; Mead)
d) hermeneutical philosophy (Apel; Habermas)
e) ordinary language philosophy (the later works of Wittgenstein; Austin; Searle; Grice)
f) transformational grammar (Chomsky; Ross; Lakoff) [3]

Factors leading to the awareness of a common object of interest and an intensified investigation of language, thus

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1) Morris, Ch.W.: Signs, Language and Behavior, Prentice-Hall, Englewood Cliffs, 1946; p.219.

2) For an analysis of Morris', Carnap's and other conceptions of "pragmatics" see Lieb, H.H.: "On Relating Pragmatics, Linguistics, and Non-Semiotic Disciplines" in Kasher, A. (ed.) Language in Focus: Foundations, Methods and Systems, Reidel, Dordrecht, 1976.

3) cf. Schlieben-Lange, B.: Linguistische Pragmatik, Kohlhammer, Stuttgart, 1975; p.60.

constituting the field to be dealt with in linguistic pragmatics,seem to include

a) an increasing interest in the acting subject,and thus also in the linguistically active subject as opposed to the structuralists' investigation of what was considered to be an autonomous system(language),

b) the development of transformational grammar which led to the incorporation of extensional semantics and finally had to deal explicitly with the user of the linguistic system,the performer.[1)]

In the development of generative transformational grammar, the "contribution of meaning to syntactic structure"[2)] became increasingly problematic.The former view (Chomsky 1957;1965[3)])that the syntactic component determined the structure of the sentence,was the "most powerful component of the grammar" and was "by definition meaning free" [4)],could not account for many observable features of language production and no longer corresponded with the insights of psychological research.

The formalisation of meaning had to be dealt with,had to be included in the now extended structure of syntactic theory. Attempts were made to drop Chomsky's concept of deep structures and substitute instead an abstract logico-semantic meaning-structure.Thus the base-components were now semantic structures:

> "The transformational component then acts directly upon such a semantic tree,without passing through a special stage of pure syntactic structure."[5)]

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1) cf.Schlieben-Lange,B.(1975);p.61.

2) Bates,E.(1976);p.5.

3) Chomsky,N.:Syntactic Structures,Mouton,The Hague,1957.
Chomsky,N.:Aspects of the Theory of Syntax,M.I.T.Press,Cambridge,Mass.,1965.

4) Bates,E.(1976);p.5.

5) op.cit.;p.6.

These aspects were dealt with in generative semantics[1]. So in generative semantics a new attempt is made to incorporate meaning into structures used to describe language. The goal, of course, is to account for

"ALL the meaning that is signalled in surface structure"[2].

Thus apparently the focus of the semantician's interest has gradually shifted from the relation between "signs and their referents"[3] towards the actual user of language and to the context in which he acts: the pragmatic aspect. However, linguists are now trying to provide structures and concepts to grasp very important notions such as the speaker's intentions, his beliefs, expectations, assumptions about the context, which make an utterance acceptable, appropriate (presuppositions), indexical expressions, conversational postulates. The linguist must increasingly account for aspects of language which cannot be dealt with uncritically in the traditional domain of semantics.

As Kempson[4] has argued, the pragmatic aspects of language cannot be accounted for within a theory of semantics. If the analysis of language should include an understanding of what the utterer intends, believes, implies, a (semantic) competence model is inadequate to describe his utterances. These must be dealt with in a (pragmatic) performance model.

The action-in-context, the speaker and the listener as persons who act are predominant factors in the study of linguistic pragmatics. Attempts are also being made to integrate a theory of the use of language into a wider theory of human action (D. Wunderlich; J. Habermas).

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1) Keseling, G.: "Semantikmodelle innerhalb der generativen Grammatik" in Funkkolleg 'Sprache', Fischer, Frankfurt, 1973 vol. II.

2) Bates, E. (1976); p. 6. (Bates' italics).

3) op. cit.; p. 2.

4) Kempson, R.: Presupposition and the Delimitation of Semantics, Univ. of Cambridge Press, Cambridge, 1975.

The relation between linguistic pragmatics,grammar and other (e.g. non-semiotic) disciplines has not been clearly defined. In spite of the uncertain epistemological status of linguistic pragmatics we can nevertheless circumscribe its subject matter:

Lieb[1] suggests: "We define the subject matter of linguistic pragmatics as the pragmatic properties of natural languages and of communication in natural languages."

"Natural language" is to be understood as "a historic language in its entirety" ; a "pragmatic property of a natural language is any property of the language that implies pragmatic properties of communication in the language".[2]

(Lieb further explains his definitions in detail.)

Stalnaker[3] offers the following suggestion:

> "Syntax studies sentences,semantics studies propositions. Pragmatics is the study of linguistic acts and the contexts in which they are performed.There are two major types of problems to be solved within pragmatics: First,to define interesting types of speech acts and speech products;second,to characterize the features of the speech context which help determine which proposition is expressed by a given sentence."

Kempson[4] says:

> " a theory of pragmatics - viz. a theory which seeks to characterise how speakers use the sentences of a

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1) Lieb,H.H.(1976);p.233.

2) op.cit.;p.234.

3) Stalnaker,R.:"Pragmatics" in Davidson,D./Harman,G.(ed.) Semantics in natural languages,Reidel,Dordrecht,1972;p.383.

4) Kempson,R.(1975);p.84.

(") language to effect successful communication"

and: "A basic condition for a pragmatic theory is that it explains not only how speakers use sentences of the language in a way which corresponds to their meaning, but also how they succeed in using those sentences to communicate information which is not specified by the meaning of the sentences in question." [1)]

2) Speech acts

As mentioned earlier, one of the disciplines which contributed decisively to the emergence of linguistic pragmatics was the school of Oxford Philosophy or Ordinary Language Philosophy. One of its prominent exponents, J.L.Austin, first formulated the need for a theory which investigates what people do when they speak. In his earlier studies, Austin differentiated between "constatives" and "performatives", i.e. utterances which state things and have the quality of being either true or untrue (constatives), like "Peter is a boy", as opposed to utterances which do not describe

"or constate anything at all, are not 'true or false' "

and where "the uttering of the sentence is, or is part of, the doing of an action" [2)],

like "I promise to go to Ted".

In his later works, Austin abandoned these notions and argued that whenever a person speaks, he acts; every form of speaking is a form of action. And

"the total speech act in the total speech situation is the only actual phenomenon which, in the last resort, we are engaged in elucidating." [3)]

Three levels of the utterance-act are distinguished:

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1) Kempson, R. (1975); p.84.

2) Austin, J.L.: How to do Things with Words, Oxford Univ. Press, Oxford, 1962; p.5.

3) op.cit.; p.147. (Austin's italics).

a) the locutionary act is the production of the utterance, the actual uttering of "full units of speech" [1].

b) the illocutionary act is performed "in saying something as opposed to performance of an act of saying something" [2].

c) the perlocutionary act :When the performance of an utterance creates certain effects on the listener or the speaker,and reference to the locutionary and illocutionary act is made only obliquely or not at all,the speaker is said to have performed a "perlocutionary act"[3].

Austin then further analysed the illocutionary roles of utterances and defined five separate types of these.

J.Searle presented a very detailed and systematic theory of speech acts [4],which differs in many aspects from Austin's concept.Searle considers the "speech act" to be a very important basic notion because

> "all linguistic communication involves linguistic acts.The unit of linguistic communication is not,as has generally been supposed,the symbol,word or sentence,or even the token of the symbol,but rather the production or issuance of the symbol or word or sentence in the performance of the speech act....the production or issuance of a sentence token under certain conditions is a speech act,and speech acts (...) are the basic or minimal units of linguistic communication."[5]
>
> "..Speaking a language is performing speech acts,acts such as

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1) Austin,J.L.(1962);p.94.

2) op.cit.;p.100.

3) op.cit.;p.101.

4) Searle,J.:Speech Acts,Cambridge Univ.Press,London,1969.

5) op.cit.;p.16.

(") making statements,giving commands,asking questions ...;and more abstractly,acts such as referring and predicating."[1)]

Speech acts are in general rule-governed.Searle distinguishes three levels of utterances.These basic categories are:

"a)The uttering of words (morphemes,sentences);
b)referring and predicating;
c)stating,questioning,commanding,promising,etc."

Searle assigns names to these under the general heading of speech acts: "a)Uttering words (morphemes,sentences)=performing utterance acts
b)Referring and predicating=performing propositional acts
c)Stating,questioning,commanding,promising,etc.= performing illocutionary acts."[2)]

Searle also added Austin's "perlocutionary acts".These were practically neglected in his later work.
The constitutive elements of the speech act are: the proposition and the illocutionary force:

"The proposition is essentially the conceptual content (expressed as a predicating expression taking one or more referring expressions) of the utterance,while the illocutionary force indicates how the utterance is to be taken or what the speaker's attitude is towards the proposition."[3)]

Many different linguistic devices (e.g. intonation)can be used to express the illocutionary force.[4)]

1)Searle,J.(1969);p.16.
2)op.cit.;pp.23-24.
3)Dore,J.:"Holophrases,Speech Acts and Language Universals" Journal of Child Language,London,1975,2;p.30.
4)cf.Dore,J.(1975);p.30.Also Schlieben-Lange,B.(1975);pp.31-40.

As Searle considered the basic unit of human communication to be the speech act (1969) or,still more precisely,the illocutionary act (1976[1]),he further elaborated this aspect of language and developed a

> "reasoned classification of illocutionary acts into certain basic categories or types"

and showed

> "how these different basic illocutionary types are realised in the syntax of a natural language such as English" [2].

3) The theory of conversation

Another philosopher whose work has strongly influenced the development of linguistic pragmatics is H.P.Grice.His theory of conversation offers a set of general conversational maxims which govern any type of conversation.They refer to the following aspects of the interlocutor's speech: -quantity,quality,relation,manner.Together these constitute the "co-operative principle".

Quantity: "Make your contribution as informative as is required (for the current purposes of exchange)."
"Do not make your contribution more informative than is required."

Quality : "Try to make your contribution one that is true."

Relation: "Be relevant."

Manner : "Be perspicuous":
"Avoid obscurity of expressions."
"Avoid ambiguity."
"Be brief." "Be orderly." [3]

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1) Searle,J.:"A classification of Illocutionary Acts" in Language in Society,London,1976,5,no.1;pp.1-23.

2) op.cit.;pp.1-2.

3) Grice,H.P.:"Logic and Conversation" in Cole,P./Morgan,J.L. (eds.)Syntax and Semantics,vol.3:Speech Acts, Academic Press,New York,1975;pp.45-46.

Grice postulates a general agreement between a speaker and a hearer to co-operate,to follow these detailed conventions and to assume that they are held by both interlocutors.Otherwise conversations would fall apart and no longer serve any communicative intentions.Of course,these basic maxims are broken very often in normal conversation,but the breaking of this type of rule does not imply the immediate breakdown of communication in conversation.Rather the deliberate deviation from these maxims allows the speaker to operate flexibly with language and to signal to the listener his intentions about the way his message is to be understood. Apart from lies and the abrupt changing of the subject in conversations,the speaker usually

> "knows and intends that the hearer shall recognise that a maxim has been broken"

and conclude that the speaker's intention is to convey additional information.[1)]

Grice's "conversational implicatures" of an utterance are defined as

> "assumptions over and above the meaning of the sentence used which the speaker knows and intends that the hearer will make,in the face of an apparently open violation of the Co-operative Principle,in order to interpret the speaker's sentence in accordance with the Co-operative Principle."[2)]

Grice (1975) has further analysed the conditions of function and the characteristics of these conversational implicatures.

These works remain rather theoretical and cut off from empirical investigations of actual speech in concrete social situations.

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1) Kempson,R.:Semantic Theory,Cambridge Univ.Press,Cambridge, 1977;p.70.

2) op.cit.;p.70.

Wunderlich[1] suggests that linguistics could profit most if this type of important philosophical work could be linked with the findings of interaction-sociologists.

I believe that the pragmatic approach to the analysis of language and communicative interaction should be used far more, should be applied to concrete interaction in more contexts, e.g.:

a) the acquisition of language (Bates:1976 and Dore:1973[2] have made a promising start here.)
b) the language of children with cognitive and linguistic deficiencies (There are practically no pragmatic studies in this field.)
c) the language of people with mental disorders (Too often investigations have, if at all, been concentrated on semantic or syntactic aspects of language.)

The pragmatic approach is promising because here the person's linguistic, cognitive and social functioning must be considered.

4) Communicative intentions

Recently (e.g. Bates:1976; Dore:1976[3]; Garvey:1977[4]) attempts have been made to bring together the theoretical work in linguistic pragmatics with the evaluation of empirical studies of language use. One of these researchers is J. Dore. He

1) Wunderlich, D.: Studien zur Sprechakttheorie, Suhrkamp, Frankfurt, 1976.

2) Dore, J.: The development of speech acts. Unpublished doctoral dissertation. New York City University, 1973.

3) Dore, J.: "Children's illocutionary acts" in Freedle, R. (ed.) Discourse: Comprehension and production, Lawrence Erlbaum Associates, Hillsdale, N.J., 1976.

4) Garvey, C.: "Play with Language and Speech" in Ervin-Tripp, S./Mitchell-Kernan, C. (eds.) Child Discourse, Academic Press, New York, 1977.

has studied the child's acquisition of language and described the earliest development and functioning of speech acts. In the studies concerned with the child's illocutionary acts, Dore argues that what really determines the speaker's utterance and is the decisive constituent of the illocutionary act is the speaker's "communicative intention". Thus a speaker intends his utterance to have two main effects:

> "a) The expected illocutionary effect - that the hearer recognize the illocutionary status of the utterance
>
> and b) the expected perlocutionary effect - that the hearer recognize what the speaker expects him to do or believe as a consequence of recognizing the utterance's illocutionary status." [1]

Dore argues that these types of communicative intentions must be represented in certain grammatical forms, which again means that their respective illocutionary acts are governed by (contextual) rules. Even when the ability to recognise the form of the communicative intention is given, it is not sufficient for the understanding of its pragmatic function. Dore's studies support his claim that a communicative intention can only be fully comprehended when extra-grammatical factors of the utterance and context are taken into account. From his studies of children's linguistic abilities Dore concludes: "It is not the grammar that conveys illocutionary intent." [2]

In one of his investigations Dore analysed nearly 3000

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1) Dore, J.: "Oh Them Sheriff': A Pragmatic Analysis of Children's Responses to Questions" in Ervin-Tripp, S./Mitchell-Kernan, C. (eds.) (1977); p.142.

2) op.cit.; p.143.

utterances of three-year-old boys and girls and tried to establish their illocutionary acts.The classification of the illocutionary acts was based on the following evaluation-criteria:

1) "The literal semantic reading of the primary proposition of the utterance,on the basis of its logical subject,predicate,adverbial phrases,and other constituents..."
2) "The grammatical and prosodic operators on the proposition."
3) "The new,or focused,information;new in relation to both conversation and context..."
4) "The speaker's related utterances and non-linguistic behavior."
5) "The reciprocal and contingent behavior,both verbal and non-verbal,of his interlocutors..."
6) "The contextual features directly relevant to the pragmatic status of the utterance..."[1)]

Dore observed the performance of thirty-two illocutionary acts.He tried to identify the communicative intentions which underlie these illocutionary acts,and later labelled and defined them.Although his categories need not be taken as a final,all-including scheme of the children's functioning, they do provide a basic and practical set of observable types of communicative intentions.For our analysis of the autistic child's utterances and linguistic interaction we will therefore use Dore's classification.

(next page)

1) Dore,J.(1977);p.143.

Dore discovered and defined the following types:
(Definitions and examples taken from Dore,J.(1977);pp.145-147)

A) REQUESTS (solicit information,actions,or acknowledgement)

1) YES/NO-QUESTIONS	(Is this a birthday cake?)
2) WH-QUESTIONS	(Where's John?)
3) ACTION REQUESTS	(Give me some juice!)
4) PERMISSION REQUESTS	(Can I go?)
5) RHETORICAL QUESTIONS	(You know what I did yesterday?)

B) RESPONSES (directly complement preceding utterances)

1) YES/NO-ANSWERS	(No,it isn't.)
2) WH-ANSWERS	(John's under the table.)
3) AGREEMENTS	(That isn't a car.)
4) COMPLIANCES	(I won't wash my hands.)
5) QUALIFICATIONS	(But I didn't do it.)

C) DESCRIPTIONS (represent observable((or verifiable)) aspects of the environment)

1) IDENTIFICATIONS	(That's a house.)
2) POSSESSIONS	(That's John's egg.)
3) EVENTS	(I'm drawing a house.)
4) PROPERTIES	(That's a red crayon.)
5) LOCATIONS	(The zoo is far away.)

D) STATEMENTS (express facts,beliefs,attitudes or emotions)

1) RULES	(You have to put it there first.)
2) EVALUATIONS	(It looks like a snowman.)
3) INTERNAL REPORTS	(My leg hurts.)
4) ATTRIBUTIONS	(He doesn't know the answer.)
5) EXPLANATIONS	(He did it cause he's bad.)

E) CONVERSATIONAL DEVICES (establish,maintain,end or otherwise regulate interpersonal contact and conversation)

1) BOUNDARY MARKERS	(Hi,and Bye)
2) CALLS	(Hey,John!)
3) ACCOMPANIMENTS	(Here you are.)
4) RETURNS	(Oh.)
5) POLITENESS MARKERS	(Please and Thanks)

F) PERFORMATIVES (accomplish acts by being said)

1) ROLE-PLAYS	(This is a train.)
2) PROTESTS	(No,don't touch that!)
3) JOKES	(I throwed the soup in the ceiling.)
4) GAME-MARKERS	(You can't catch me.)
5) CLAIMS	(I'm first.)
6) WARNINGS	(Watch out!)
7) TEASES	(You can't come to my house.)

MISCELLANEOUS CODES

1) UNINTERPRETABLE
2) DOUBLE CODED

V. SPEECH PRODUCTION AND COMMUNICATIVE INTERACTION OF AUTISTIC CHILDREN

In the following chapter we will look at examples of autistic children's actual speech and communicative interaction, which I was able to observe at the school. They will be discussed within the pragma-linguistic framework I have described above. Reference will be made especially to Dore's classification of Communicative Intentions and to Grice's concept of Conversational Maxims and Implicatures.

1) Four categories of linguistic ability

I have mentioned earlier that the pattern of autism varies very much from child to child. The differences between individual children in the ability to use and understand language are considerable.

Taking as a criterion the children's language-production, L. Wing[1] suggests a subdivision into four groups:

> "1) Children who are mute or have only meaningless echolalia
> 2) Children who have some useful single words or phrases
> 3) Children who produce longer utterances but who have very marked abnormalities, such as pronoun reversal, muddled sequences, markedly abnormal grammar, difficulty with prepositions, and use their own peculiar words or phrases in place of more commonly used nouns...
> 4) Children with good grammar and vocabulary, but who are concrete, pedantic and repetitive."
>
> ("concrete" here describes their use of language, which is very literal and includes neither abstract words nor metaphors.)

The teachers at the school I visited very kindly assessed the children's linguistic abilities according to these

[1] Wing, L. (1977, personal correspondence).

categories.Out of the thirty-three children I met at the school,

four fell into group 1,
fourteen into group 2,
four fell into group 3,
eleven into group 4.

It must be noted that even amongst children of the same language-group there were considerable differences.
The names given to the children in the following chapters are not their real names !

2) A conversation between an autistic boy and a non-autistic adult

a) The interlocutors;the situation

A lot of things happen in conversations!Let us look at an example of interaction between an autistic child and a non-autistic adult.I myself was present when this conversation took place.I recorded the speech and was able to observe the situation and the speakers.
The situation: the autistic boy - I shall call him 'Ronald'- ,two adult houseparents,one adult visitor (myself) are present in the children's dormitory.Other autistic children are in the adjoining bathroom and occasionally come into the dormitory.Some of the children are having a bath.It is bedtime.The two houseparents and I are having a chat and are waiting for the children to take a bath and then get ready for bed.
The interlocutors: Ronald is sitting on his bed,a few yards away from the adults,dressed in his housecoat and waiting for his turn to have a bath.
Ron is a very lively,rather 'bright' eleven-year-old boy, who clearly shows the characteristic features of autism. His teachers say he belongs to group 3.
Most of the following conversation goes on between Ronald and the male houseparent.The two have got to know each other quite well.Ronald is aware of the houseparent's

firm authority as the person in charge.The female housepa-rent is new here.The child is aware of her position,but has not been able to establish a relationship yet.The adult visi-tor has been at the school for a few days and thus is no longer a totally perplexing novelty in the child's sur-roundings.

Ronald is talking to himself,uttering words audibly which do relate to the situation to a certain extent but are not addressed to anyone.He is most probably echoing words he heard at some other time.He mentions "wet" and "bed" and a phrase like "wet the bed" or "Ron's wet the bed",phrases he surely must have heard often.These utterances,in this speci-fic situation,do not seem to be goal-directed communicative acts.Knowing that "incoherent"[1] speech is common in early childhood autism,the listener might simply ignore the child. If the listener,however,decides not to ignore these seeming-ly irrelevant utterances,how will he react?What will they signify to him?

"Bed"would probably be taken as the immediate link between the actual present situation (Ron is sitting on the bed) and whatever remembered previous situation or event the echoed words originate from. "Wet" may describe the condition of the children who are noisily having their bath and can be seen from where Ron is sitting,or the condition of the bed, a bed being or becoming wet either because someone has wet it (enuresis) or because someone has come back wet from the bath and made the bed wet.One would expect the meaning of a phrase like "Ron's wet the bed" to be fairly clear.But even with this utterance,careful distinction between spontaneous speech and seemingly irrelevant echolalia is necessary.To decide what an autistic child's seemingly irrelevant,undirec-ted speech could possibly mean,all possible contextual and

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[1] Kanner,L.:1946,in K.,L.(1973);p.45.

situational information must be taken into account.The boy's utterance of "Ron's wet the bed" in our situation can be understood as an echo evoked by a link with two different earlier situations:

a) Ron has wet the bed.His mother scolds him and says:"You've wet the bed again.Ron's wet the bed!"...

b) Ron has wet the bed.His mother discovers this and calls out,"Ron's wet the bed!"By uttering this she wants another member of the family to understand:"Please take him to the bathroom and give him a bath!"
So the illocutionary force of this utterance would be that of request or command.

The listener can either ignore the child's utterances or react by interpreting them in one of the possible contexts. As far as possible,historical information will also have to be taken into account if the present situational clues are insufficient.

Although Ronald apparently did not state anything to anyone, the male houseparent decided to pick up the clue and to react by asking Ronald a question.The houseparent asked the boy whether the sheets of his bed were wet.The boy said they were.The houseparent knew that the bed was not wet.He could see this from where he was sitting,but did not wish to get up and demonstrate that he was able to get this information without asking the boy.

I have recorded the conversation which followed this short exchange of words.

b) The text: the transcription of the conversation

R: Ronald

Hp: houseparent (man)

Hp2: houseparent (woman)

Sam: Sam, another autistic boy

St: Stefan (myself)

....: short pause; the intonation of the preceding words indicates that the speaker knows that the sentence is not finished, and, in many cases, wants the listener to continue the sentence.

Hp has asked R whether R's sheets are wet. R says they are. (They are not!)

Hp: That's it, come on, get them washed!
R: (Whines.)
Hp: Where's the wet bed?
R: 's the wet bed.
Hp: Where?
Where is it?
R: That's the wet bed. (Standing next to his bed.)
Hp: Right. Wash it out!
R: Are you going to be good now?
Hp: No, you're not.
R: Want to go to bed?
Hp: No.
R: (Whines.)
Hp: No, you can't go to bed, no.
R: Going to be good now?
Hp: No, sorry.
R: You can sit on the settee.
Hp: No.
R: (Whines.) You can sit on the settee. (Walks over to St, starts to climb onto him.)
Hp: No. No, get off Stefan, get off!
R: Mmm, can he lie on the carpet?
Hp: No.
R: 's he go to bed?
Hp: No.
R: Want to go to bed?
Hp: No.
R: Has he been naughty?
Hp: No.
R: Has he been good boy now?
Hp: No.
R: Ron has been lazy.
Hp: No.

R: Ron has been silly.(Cries.) 's wet the bed.(Turns to Hp2.) Want to go to bed?
Hp2: No.
R: Want to go to bed?
Hp: You can't get into a wet bed.
R: You can lie on Sam's bed.
Hp: No.You can take the sheets off.
R: (Whines,starts to climb onto St.)
Hp: Get off Stefan!(R wants to sit down on the carpet.)Don't sit on the carpet!
R: Do you want to go to bed?
Hp: You can't go in the wet bed,can you?
R: Are you going to be good now?
Hp: No.
R: 's he go to bed,does he go to bed?
Does he go to bed?Ron has been naughty.
(Whines.) You can sit on the chair.
Hp: No.
R: (Cries.) You can stand up,you can stand up.
Hp: Yes.
R: (Sees a coconut on Sam's bed.) Do you want a cocy nut, want a cocy nut?Do you want to go to bed?
Hp: No.
R: Do you want to go to bed?Ron has been naughty.(Tries to sit on the bed.)
Hp: Get up,off!
R: Ron has been naughty.Ron has been naughty.Ron has been naughty.No? (Cries.Is very upset.)
Hp: Come here.Come here.Come here.
R: Do you want to go to bed?
Hp: Come here!Now.Did you wet the bed?
R: Yes,I have.
Hp: Did you?
R: Yes,I do.
Hp: Take the sheets off,then!
R: -go to bed.
Hp: Take the sheets off!If you wet the bed,you take the sheets off.Did you wet the bed?
R: Yes,I have.
Hp: Alright.Go and take the sheets off! (R is crying.)Take them off!Hurry up,then you can get into bed.
R: (Starts taking the sheets off,although they aren't wet.)
Hp: Is it wet?
R: Yes,I have.
Hp: Alright,take them off!

- - - - -

Hp: Are your sheets dry?Are your sheets dry?
R: Yes,I have.
Hp: Are your sheets dry?
R: Yes,I have.
Hp: Are your sheets dry?

R: Yes,I do.
Hp: Are your sheets dry?
R: Yes,I did?
Hp: No.Are your sheets dry?
R: Yes,I have.
Hp: No.Are your sheets dry?
R: Yes,I did.
Hp: No.Yes,....
R: I..am
Hp: No.Are your sheets dry?Are your sheets dry?
R: Yes,I have.
Hp: No.Yes what?
R: Yes,I have.
Hp: No.Are your sheets dry?
R: Yes.
Hp: Yes....
R: I have.
Hp: No.
R: Yes,I did.
Hp: No.
R: Yes,I...
Hp: No,no,no.
R: Yes,I have.
Hp: No.There's a "they" in it somewhere."They".Are your sheets dry?
R: There's a label.
Hp: No."They".Are your sheets dry?Yes....
R: I they.
Hp: No,are your sheets dry?
R: Yes,I have.
Hp: No,it's "Yes,they" isn't it.
R: Yes they.
Hp: Yes they what?
R: Yes they ...what.
Hp: No.
R: Yes.They.
Hp: Are your sheets dry?
R: Yes they..
Hp: Yes they..
R: Did.
Hp: No.
R: Yes,they have.
Hp: No.
R: Yes,they...did.
Hp: No. (To St:) He is saying everything except the word he knows he should say.(To R:)Are your sheets dry?
R: Yes,they..No.
Hp: No.Are your sheets dry?
R: Yes,I have.
Hp: No.Yes they what?
R: Yes they,yes they.

Hp: Are your sheets dry?
R: Yes,I have.
Hp: No.
R: Are your sheets dry?
Hp: Are your sheets dry?
R: Yes,I have.
Hp: No.No.You can stay up all night.
R: Are you going to be good now?
Hp: No.Are your sheets dry?
R: Yes,I have.
Hp: No.
R: Are your sheets dry?Are your sheets dry?Are your sheets dry?
Hp: No.You should say :"Yes,they are",shouldn't you.
R: Yes,they are.
Hp: Are your sheets dry?
R: Yes,they are.
Hp: Is your bed dry?
R: Yes,they are.
Hp: No.
R: Yes,they are.
Hp: No.Is your bed dry?
R: Yes,I have.
Hp: No.Yes it ....
R: Is.
Hp: Right.

- -

c) The analysis of the conversation

This conversation is rather extreme in several ways:

a) Its length,if one considers the child's limited ability to use and understand language.

b) It is a very long conversation about very little.

c) The houseparent's insistence and refusal to give in.

d) The high frequency of rapid exchanges and the child's continuous groping for a satisfactory reply.

e) The high rate of misunderstanding.

Let us now take a closer look at this interaction:
In line 1 (L1) the houseparent has apparently decided to take the boy's reply for granted,i.e. that the sheets are

wet,and implies that Ronald has wet them.He decides to enter into a conversation with the child,accepting the child's verbal information as correct.At the same time he excludes other means of gaining information,e.g.walking over to the bed and asking the boy to show him where the bed is wet.So the houseparent deliberately limits the exchange of information in this specific situation to the verbal channel.He wants to make use of only one channel of communication in this interaction: speech.

So if Ronald says the sheets are wet (even though they are not) the houseparent consequently tells him to get them washed.Ronald is upset and whines (L2).Either he does not like the idea of changing the sheets,or he notices that something has gone wrong in the communication,that something has been misunderstood.The houseparent's next question is echoed, then answered:"That's the wet bed."(L7).Ronald is now standing next to his bed.The houseparent's "Right."(L8) is a confirmation to the child implying that they both agree which of the two beds in this room is wet and also that it really is wet. This is certainly a misleading confirmation for the child. Ronald reacts to the houseparent's order to wash out the sheets by echoing a phrase he must have heard a thousand times in his life: "Are you going to be good now?"(L9).In the boy's repertoire this phrase is linked with situations where he was made to feel that he had done something silly and was expected to behave better.In our context the utterance would mean something like:"Have I done something wrong?Yes.I must behave better,mustn't I?"It is an attempt to grasp the emotional structure of the interaction,to understand his own position. The houseparent answers something rather confusing: "No,you're not." How is the child expected to interpret this answer? By saying this the houseparent communicates to the child that

a)he knows that "Are you going to be good now?" is not a proper question addressed to him, "you" referring to the houseparent,but rather a phrase of relevant echolalia;

b) he knows that the child means himself by "you", and is asking about his (the boy's) present or future behaviour,

c) whatever the boy's phrase really means, the houseparent's answer, given in the same grammatical form as the question, must lead the boy to think that he will not, shall not or is not going to be good now. And what should that mean? So the child only learns that somehow he has been rejected.

The following question (L11) is an attempt to break away from the problems with the wet sheets and expresses Ronald's desire to go to bed. He is trying to get information as to what he may and/or is to do.

In L 15 Ronald again tries to sort out the emotional situation by uttering that phrase "Are you going to be good now?". The houseparent's reply is very short (L16), but not quite clear. If "sorry" has any meaning here at all, it can only be understood as an answer to a question like: "Am I being good now?" If the houseparent interprets the boy's phrase in this way, his answer ("No, sorry") means: "No, I'm afraid you are not being good". And why should he say this? The only reason could be that the boy has not started to wash the sheets yet. But, then, they are not wet after all. How is the child supposed to deal with this linguistically hazy situation?

I am trying to show how a few minute details of this conversation, from which non-verbal channels of information are excluded, can very quickly lead to a disturbed form of communication. When talking to autistic children, one must always take into account their tendency to interpret everything literally. In our case the misunderstanding is partly due to the boy's inflexible use of language and limited understanding, partly also to his partner's approach to the communicative interaction, to the words and sentences he offers the child.

In L 17 and the following lines Ronald, who is upset and is walking about in the dormitory, tries to find out what he is

supposed to do,what he can do if he does not want to tackle the sheet-problem.So he asks whether he may sit on the settee or lie on the carpet or go to bed.He does not say something like :*"What do you want me to do?" or *"What am I supposed to do?",the type of question which reflects the interaction of the two interlocutors.Ronald often uses direct affirmative statements with a slight question-tag to express a desire. Lines 27,29,31,33 are further attempts to find out why the houseparent seems to be displeased.The first two are proper questions,with " he " referring to the boy himself.Line 29 is part of an echoed phrase embedded in an inappropriate grammatical form (tense)." Good boy now " is used as an attributive unit,like an adjective.In lines 31 and 33 Ronald is again offering interpretations of his conduct." Lazy" and "silly" appear to be forms of relevant echolalia,things for which he has been told off before.They are only guesses.He also offers the imagined solution:"'s wet the bed ",which he, of course,has not really done.

The houseparent does not answer.Ronald again asks whether he can go to bed.Now the houseparent tells him why this is not possible,still pretending to take Ron's earlier statement about the wet sheets for granted.They both still do not use other forms of verbal or non-verbal communication.So the question of truth is never raised.No double meaning,no irony, no sense of pretense can enter,because the houseparent refuses to use verbal or non-verbal signals which might help to change the truth-dimension of the whole situation.So,limited to the one-dimensional type of verbal exchanges,they continue. Ronald seems to understand the houseparent's reasoning and offers - quite cleverly really - to lie on another boy's empty bed instead (L38).The houseparent says,"No.You can take the sheets off." This answer implies,but does not express,a switch from one object of reference to another (from Sam's bed to Ron's),which the boy is supposed to grasp immediately.In addition to this,the meaning of "can" is different in

all three phrases (L 37,38,39).In Ron's proposal "You can lie on Sam's bed", "you can" stands for "may/shall I";in the houseparent's answer,however,"can" is an indirect imperative.In L 37 "you can't" means "you shouldn't" or "one doesn't".
I consider a close analysis of the verbal interaction to be important because it shows what kind of linguistic material the autistic child,whose use and comprehension of words as symbols is concrete and restricted,is confronted with.The analysis of actual speech production and communicative behaviour can show just where the individual child's functioning is impaired.
To grasp the function of words and then to generalise,to learn that one word may stand for two or more things which do not have to look alike,is indeed a very difficult task for the autistic child.
I doubt whether Ronald can differentiate between various context-dependent functions of "can".Nevertheless,he must try to pick out cue-words or indicators (negation,Sam's bed,sheets off).Otherwise he risks an even more severe distortion of communication.So,what to normal children is an unreflected handling of the useful language-tool,is to the autistic child the confrontation with a sophisticated system of linguistic forms with varying shades of meaning. He may be able to grasp the principle thoughts encoded by this system,but this is by no means sure.

Ronald (L40) tries to climb onto the visitor,is told not to, sobs a little,sits down on the carpet,is told not to do this and finally starts asking the same old questions again: "Do you want to go to bed?" and "Are you going to be good now?". The houseparent (L45) answers, "No." No what?No,you are not going to be good now (which makes no sense)? No,you are not good now (which does refer to their interaction but gives the child no information about the reason)? Or:No,stop asking me all these stupid questions?

Now Ronald changes from "you" to "he" when referring to himself (L46): "Does he go to bed?" This is a common feature in autism. He is confused and repeats his desire three times, adding a quick possible explanation for himself: "Ron has been naughty." Then he asks whether he may sit on the chair or whether he should stand up. This time the houseparent gives him a positive answer: Yes, he is supposed to stand up.
All the while Ron is moving about, trying to sit down on the carpet or the bed and getting up again, not knowing really where to go. Then his attention is caught by a coconut lying on the other boy's bed. Ron would like to go and take it (L52) : "Do you want a cocy nut?" "Cocy" is treated like an adjective, both words are stressed separately. Ron returns to the unsolved situation and repeats, sitting down on the bed, that he wants to go to bed. The houseparent refuses to give in and let him do this. Now the boy is very upset and cries because he is neither allowed to do what he would like to do, nor is he told what he should do. He quickly utters that phrase three times which to him offers the only explanation for this strange communication: "Ron has been naughty. Ron has been naughty. Ron has been naughty." (L57). He adds an echoing of the houseparent's standard reply: "No." This last word has the intonation of a question. When the houseparent tells Ron to come to him and repeats this twice (L59), the boy objects by repeating his wish to go to bed. The houseparent (L61) has decided to make an effort to clear the situation, to make Ronald realise what he is interested in. He wants to obtain from the boy a correct verbal answer, correct as far as grammar and also the actual situation is concerned (state of the bed). But he does not want to communicate this aim to the boy by expressing it verbally and explicitly. So he does not change the form of verbal communication. This is, of course, an unusual proceeding in such a situation. The reason is that the houseparent is not really interested in finding out about the bed.

His aim is to get the boy to cope with the situation linguistically. Now the houseparent asks the crucial question (L61): "Did you wet the bed?" Ronald's reply comes very quickly. Listening to the recording one notices that his utterances of "Yes,I have" (L62,69,74,79,85) are,although syntactically wrong,triggered off very quickly and automatically.Ronald says he has wet the bed.The houseparent hopes that by repeating the question (L63,68) the boy will realise that the reason for doing this is that he is expected to give a different answer.The houseparent has two ways of verbally signalling to Ronald that he wants him to change the content of the answer: a)By repeating the question he hopes that the boy will come to suspect this repetition,will notice that the houseparent is not interested in pursuing a stereotype game of question and answer,but is trying to communicate information about the boy's verbal acts.
b)Apparently accepting the boy's affirmative answer and continuing the sequence of action logically,he hopes that the boy will be annoyed by the consequences: "Take the sheets off! If you wet the bed,you take the sheets off",and will change his answer because it leads to such unwelcome orders from the houseparent.Ron does not understand the function of the repeated question (a).He gets upset when the houseparent tells him to take the sheets off(b),but does not conclude from this that he can avoid being told to do this by simply changing his answer to "no".
We have now for the first time a linguistic variation.In L62 Ron answered the houseparent's question: "Did you wet the bed?" with his immediate automatic: "Yes,I have". Not satisfied with this,the houseparent asks: "Did you?",omitting the remaining proposition of the sentence.Ronald replies: "Yes,I do" (L64).It is not clear why he should vary his answer.Either he takes "Did you?" as a new and complete phrase,failing to substitute the missing "wet the bed".He does not now respond,

as in the earlier examples,to "wet the bed",the main propositional content,but to the form of "do",to "did you" and gives an analogous reply:"Yes,I do." Or he has come to realise that the function of repeating the question is to inform him that a different answer is required,but fails to recognise which linguistic constituent of his answer is responsible for the failure to be accepted.
The houseparent does not react to the syntactic mistakes in Ron's answers.His reactions are determined only by the correspondence of the boy's phrases with the situational facts.Thus Ronald is not given the chance to realise that his altered reply is a step in the right direction,because the houseparent,just as before,tells him to take the sheets off.So Ronald is not given a chance to evaluate his attempt to vary his answer and,in L60,he again falls back into his stereotype automatic:"Yes,I have". When the houseparent changes his question,now asking (L73)"Is it wet?",substituting "it" for "bed","wet" again triggers off his standard reply:"Yes,I have". This question,of course,like the earlier ones,still demands a negative answer.We can interpret the boy's verbal action as a complete failure to recognise that the individual words of his sentence refer to different entities. "Yes,I have"is understood and used as an undivided unit of meaning to answer the type of question the houseparent has been asking Ron. Probably the boy's attention is focussed on the realisation that he is a)expected to act,to say something,and that he is b)being put in some kind of causal relation with the wetness of the bed.

An additional aspect of this communicative interaction must be considered.In the normal child's acquisition of words,the meanings of these are gradually expanded,modified or specified and re-interpreted in terms of new experiences.The autistic child,however,finds it extremely difficult to expand or modify the meaning first learnt.When the autistic child

experiences a certain word in a certain context as having a certain meaning,this specific meaning is stored and will not undergo any change.The more able child will have

> "hundreds of stock words,phrases or sentences which he brings out automatically as labels for all familiar occasions." [1)]

But the child is unable to use these appropriately if the actual context is different from the original one.
It is possible that Ronald is still speaking and interpreting all the utterances about himself and the wet bed as referring to that context in which the meaning of these utterances was first learnt.He might not look at the conversation and the actual situational context from a "here and now"-angle at all,but possibly his behaviour is still determined to a certain extent by the circumstances of that original situation or event with which he still links the meaning of "Ron's wet the bed". I should like to emphasise the possibility that the autistic boy,having experienced words and phrases like "wet","bed","wet the bed" long ago in a specific context and still understanding the meaning of these words as determined by that original context and experience,is unable fully to transfer the function and meaning of these words to a new and,with respect to some details,certainly different, situation and to handle them competently.It is not only the referential meaning of words and the propositional content of phrases which,once learnt in a specific situation,are stored away,but the fact that the autistic child experiences the function of words,the illocutionary force of phrases in specific situational contexts and stores these away, unable to use them creatively and flexibly.

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1) Taylor,J.E.:"An Approach to Teaching Cognitive Skills Underlying Language Development" in Wing,L. (ed.)(1976);p.205.

Thus the listener cannot be totally sure whether Ronald is answering the questions according to the circumstances of the present context or whether he is influenced (confused) to a certain degree by that first experience of meaning.Ron might have (as we have discussed earlier) first learnt the meaning of "Ron's wet the bed" in a situation where he had actually wet the bed,and where his mother used this phrase when she discovered this,either to scold him ("You have wet the bed again.Ron's wet the bed!") or to get another member of the family to give Ron a bath ("Ron's wet the bed"meaning "Would you please take him to the bathroom?He's wet the bed again.").So it is possible that Ron does grasp the content of the houseparent's question and answers: "Yes,I have" just because he fails to understand the reference of the individual words in this present context,but understands them instead as somehow referring back to that experience when he did wet the bed.

Thus when one tries to understand what " wet","bed","Ron's wet the bed" signifies to the autistic boy,it is not enough to know which types of bed,what kind of wetness add up to the child's notion of bed,wetness or the meaning of "Ron's wet the bed". One should (ideally) know in which sequences of action these words and phrases were,and possibly still are,embedded in the child's mind.One should try to establish the illocutionary force attached to the utterances.The"meaning" a word or phrase has for an autistic child is also determined by pragma-linguistic factors like situational context,emotional relation between the interlocutors,their intentions and expectations,the illocutionary acts performed by them.

Because words and phrases are embedded in whole sequences of action,which the child stores,and constitute only part of these,it is very difficult for the autistic child to manipulate communicative interaction if its functioning depends on the meaning of single words,which are often represented by two or three different sounds.

As far as L75,the houseparent has asked "yes/no"-questions which demand a negative answer.The boy has failed to give the expected correct reply.In the ensuing lines a different approach is tried.The houseparent changes his question so that the answer should now be "yes" in order to correspond to the situational facts.He might expect this to be an easier task for Ronald because it involves only a positive statement about the actual situation that can clearly be seen by the boy.He repeatedly asks:"Are your sheets dry?" The interesting point here is that,although Ronald makes the correct decision about the condition of the sheets,he adds a common,but unnecessary second affirmation:"Yes,I have (I do, I did)" This,however,is given a syntactically wrong form and must lead the listener to believe that the boy might be able to grasp the new element of "dry" as opposed to the earlier "wet" ,but again fails to understand the function of the whole sentence.The houseparent refuses to vary his question,but repeats it over and over again.Ronald answers the same question "Are your sheets dry?" four times,twice with "Yes,I have",Ron's standard reply,then changing the verb form "have" to "do" and then to "did".He is only then told "no" . The houseparent's approach to the situation has so far been directed at the direct verbal interaction and has excluded the possibility of 'talking about talking'.He has never explicitly told (verbalised) Ronald why the given answers do not satisfy him,as well as which part of the answer is right and which is wrong.Only after four wrong answers to four repetitions of the question does the houseparent comment:"No" (L84).The word "sheets" is stressed only in the first four questions (L76 ff).In the subsequent examples the houseparent tends to stress all the words equally,with the opening "are" sometimes being slightly more prominent than the rest. The houseparent's intonation can thus give the boy a clue about the position of the crucial word only in the first

four examples.Seeing that the houseparent has continually repeated the same question and has in no way given any verbal or non-verbal sign of approval,in fact,seeing that he has only reacted by saying the same thing again,Ron must have realised that something about his utterances must be wrong,making them unacceptable.So he decides to vary the verb form.He does not vary the positive"yes",nor the pronoun.Because he is not stopped after uttering the opening positive"yes" ,he concludes,taking "yes I" as a unit (the two words are not interrupted by a speech pause),that it must be the last element which is crucial.He has probably learnt to recognise this final"have" or "do" as a separate entity.He must have heard and used "Yes,I have" and"Yes,I do" hundreds of times because they represent the common standard reply to "yes/no"-questions in English.

It is not quite clear what "dry" means in Ronald's vocabulary. One might expect him to react to the houseparent's first "No. Are your sheets dry?"(L84) by changing to a negative answer, especially since the opening "Are ..." is slightly stressed. But he does not.He says,"Yes,I did."(L87).The houseparent offers: "No.Yes..." .Ron can understand that his own positive "yes" is confirmed,but fails to realise that the houseparent offers only these two words because the first word is a comment on the boy's attempt,the second being the only correct word in the boy's answer.

If in Ron's understanding and use of language "Yes I" represents a single unit,the boy will not vary the pronoun.And he does not:To the houseparent's "No.Yes..."(L88) the boy replies by adding"I" ,pauses,and then adds "am" .

After this the whole cycle starts again;three times with "have", once with "did".In L102,the houseparent interrupts Ron just after his "Yes I",trying to get him to concentrate on the second word,to split the "Yes I"-unit. He fails.

Let me remind the reader that what we are looking at here is

not a calm and relaxed face to face conversation over a cup of tea.We are observing an autistic boy who is very upset, whining with frustration and moving about in the room.Adults and other children are in this and the adjoining room.The houseparent is interested in getting the boy to produce a syntactically correct and also true sentence.The boy does not really know what it is all about and is much more interested in taking a bath and then getting into bed.
For the first time now (L104) the houseparent breaks away from the form of direct speech used so far and gives explicit information about the verbal interaction which is going on.To Ron's "Yes,I have" he replies "No.There's a 'they' in it somewhere.'They'.Are your sheets dry?"(L104).This is rather abstract: the boy is supposed to realise

a) that the houseparent is nominalising a so far unmentioned pronoun ("they "),

b) that "it" refers to the boy's sentence or reply,

c) that a sound-label ("they") can be "in" a sentence,

d) that the function and purpose of uttering this statement is not simply to inform the listener,but rather to order him to include this "they" in his answer.This intention is not expressed through a syntactic operation.

In addition to this the houseparent's first utterance of "they" is rather unclear,the "th" sounds more like an "l". Because normally the listener can grasp the speaker's intention and knows what he is aiming at,the presuppositions in a),b) and c) are properly evaluated and thus a faulty pronunciation of "they" will not produce misunderstanding. We immediately check what a faulty "ley" or "lay" could mean and substitute the correct "they",as this is the most meaningful correction in the context of the houseparent's intention.We can take into account the various factors of the situation,put ourselves into the position of the speaker and thus interpret his intentions.Lack of empathy is a basic

impairment of the autistic child's communicative functioning. Ronald cannot interpret the houseparent's utterance.He is unable to grasp that "they" is a pronoun.He does not understand that "they" is offered as a separate item and as a substitute for his wrong "I" .He does not see what the houseparent is aiming at.So he echoes the statement,changing the word which sounds like "ley" or "lay" and does not make sense to him into a familiar noun: "There's a 'they' in it"(L104) becomes "There's a label".

Ron fails to recognise that "I" and "they" belong to the same syntactic category. "Yes I" is not separable to him.So when the houseparent tries to make it clear and starts him off with "Yes...." (L106) Ronald continues,as we might expect,with "I they" ("Yes I they").He continues to leave the unit of "Yes I" untouched and only varies the final word: "Yes,I have","Yes,I do", "Yes,I did" and now "Yes,I they" .

This is a dead-end alley.

The houseparent tries again and says, "It's 'Yes they',isn't it" (L110).Having grasped this and accepting a new unit "yes they", Ron answers four times with "yes they" ,rigidly observing this new sentence opening but unaware of the necessity or not able to complete the sentence.Finally he suggests "did", adding the same verb forms to this new unit which he had used with "Yes I".

I totaly disagree with the houseparent's remark in line 124. The factors which speak against this are:

a) Ron has a definite goal in mind:he is waiting for his turn to have a bath and wants to go to bed after that. The long conversation is a nuisance and keeping him from pursuing his interests.

b) He has no reason to and certainly does not enjoy this tedious conversation with the houseparent.He is upset, whines,cries and shows no signs of pleasure in producing wrong answers .

c) On other occasions, when Ron's emotional state and his interests were quite different, the same type of linguistic performance could be observed.

So now the boy constantly answers "Yes they" (Ll11, 115, 117), then starts to add verb forms (Ll19, 121, 123). In line 126 he says, "Yes they...No." To this the houseparent answers: "No. Are your sheets dry?" What does this "no" signify? It can only mean that Ron's utterance is incomplete, that the last word ("no") is unwanted, that Ron has failed. Does Ron interpret the houseparent's answer to mean that the opening words are correct, and only the last bit is wrong? How does he react? He immediately falls back into the old stereotype! Forgetting the correct opening with "Yes they", he gives the old automatic reply: "Yes, I have" (Ll28). Not only once, but four times! When the houseparent threatens to let Ron stay up all night, the boy immediately reacts with the phrase we have seen him echo earlier when he was aware that he had done something wrong and was or might be told off: "Are you going to be good now?" In line 142, Ronald three times echoes the question he has heard so often and is finally told the correct answer. Only now does the houseparent explicitly 'talk about talking' and tells the boy what to do in a whole sentence: "You should say 'Yes, they are', shouldn't you" (Ll43).

This is tested with a final utterance of the old question. The boy promptly gives the right answer. Just to see whether Ron can apply this information flexibly and is aware of the linguistic correspondence between the elements of question and answer, the houseparent asks: "Is your bed dry?" (Ll47). Unable to handle the linguistic categories well enough, Ron automatically gives the answer he has just been taught in this tedious lesson: "Yes, they are."

d) A summary

Let us consider which types of communicative intentions Ronald has expressed in this conversation. Of course, this interaction is totally dominated by the houseparent. He offers stereotype repetitive questions and limits the interaction to the direct verbal channel of communication. The boy is thus hemmed in and can practically speak only in reaction to the houseparent's questioning. There is no free, creative flow of speech and thoughts and we cannot expect to find a large variety of illocutionary acts.

Most of the boy's utterances are "yes/no"-answers, since the houseparent's primary intention is to get the boy to produce the true and correct reply to the questions. We have already analysed these answers and noticed that they are all stereotyped and that one answer ("Yes, I have") seems to be triggered off automatically. The reference of the individual words seems to be unclear. The boy never answers *"I don't know". He never comments on his own performance, never talks about talking. The grammatical form of his "yes/no"-answer in itself is usually correct, but does not correspond with the context (pronoun mistakes). His answers usually do not reflect the facts of the situation. A speech act with a rather unclear communicative intention is that of the type: "Are you going to be good now?" This sounds like a "yes/no"-question, but the boy's related utterances and non-linguistic behaviour do not allow one to conclude its real pragmatic status. The boy does not seem to expect an answer. It appears to be an utterance produced automatically when the boy is criticised, a kind of relevant echolalia used to grasp the emotional situation.

A third type of communicative intention is that of Explanation. One may consider utterances like (L31,33) "Ron has been lazy", "Ron has been silly" to be attempts at offering an explanation to himself and the houseparent for the latter's dissatisfaction at the boy's linguistic performance.

The statements are meant to be understood as questions,the listener is supposed to comment,to reply.Ron never speaks of himself as "I" in these Explanations.

Quite frequent is the Permission Request- type of communicative intention.The form of this type is interesting:a statement in the 2nd person singular (L38): "You can lie on Sam's bed". Here the boy is really producing what the adult would answer (giving permission to act) if the boy had asked a proper question.The boy says what he knows precedes the granting of a wish.He says what he would like the adult to say: "You can..". This is a failure to grasp and assign the pragmatic function of an utterance to a specific speaker in a specific context. The grammar is correct,but the pragmatic relation between utterer,utterance and situation is not understood."You can.." must be spoken by the person with the greater authority.The boy simply echoes what he has heard adults say in similar situations.

And how can the listener understand the function of this utterance?First,by evaluating the situational and contextual factors;second,from experience.

In many cases the listener will find the "You can.."-utterance to be senseless if taken literally with "you" referring to the listener,because he has in no way expressed the desire to do that which the autistic child apparently allows him to do.If the listener reacts by carrying out the action "allowed" or by replying "Thanks,I don't want to",the autistic child will repeat his first utterance until the listener notices that the communicative intention is not that of giving permission to someone,but rather that of Permission Request.An inexperienced listener will initially be misled by such utterances and will have to learn to recognise their pragmatic function.

Closely related to this type is the expression of Desire.Ronald expresses his desires with "Do you want...?"-questions. This again is the production of the adult's sentence,which

usually precedes the granting of a wish.The communicative intention of an utterance like (L52) "Do you want a cocy nut?" can be understood only by observing the situation in which it is produced.In our case,Ron and the listeners both saw the nut,and Ron would have gone over to fetch it.His utterance was not accompanied by any gestures or facial expressions indicating that he was offering to give the nut to the listeners.The intonation resembled that of a question, but the rhythm was too strained to express a real interest in finding out the listeners' desire.Furthermore,the coconut did not belong to Ron and he had not fetched it yet,so he could hardly have meant to offer it to anyone.An inexperienced listener might again be puzzled by this type of utterance.In other situations,however,the communicative intention of these "Do you want...?"-questions is still clearer, as in (L53,55,60):"Do you want to go to bed?" Here the situational factors make it clear that the only person who has any interest at all in going to bed,and also the opportunity of doing so,is the boy himself.

3)Further examples of the boy's use of language

I should like to remind the reader that many autistic children say very,very little.Ronald talked more than some of the other children,but much less than normal children do. He would often sit for long periods without addressing anyone in the room,just mumbling echolalic bits of language to himself.Verbal interaction with an interlocutor would almost always be limited to the exchange of a few utterances.
We shall now look at other examples of Ron's use of language.

Situation A: Ronald(R),the houseparent(Hp) and the author (St) are in the boys' dormitory.There is a coconut on the table of another child.Ron sees the nut and walks towards it.

R: Have a look at the cocy nut.
St: It's "coconut".
R: It's got water inside.(Shakes the nut.) Do you want a coconut?Can you have a coconut?

(Sit.A) R: Do you want to have a coconut?
(Looks at Hp.)
Hp: No,Ronny,that's Sam's.

This is one of the few times when Ron initiated the (verbal) interaction.The first communicative intention is that of Internal Report.Ron's intonation and the absence of gestures make it clear that he is not inviting the listeners to come and look at the nut,but is rather expressing his intention to perform an act.The most striking feature here is the slightly varied repetition of what looks like a "yes/no"-Question but,as we have seen,is really an expression of the boy's desire to see the nut.The repetition underlines the strong desire.

The author was astonished when he first heard Ron utter a complete and correct request:

Situation B: Outside.Ron is sitting on a large tyre to which a board and little wheels have been fastened.The author is standing near the boy. Ron says: "Please Stefan,will you give me a push on the tyre."
No facial expression,no gestures accompany the boy's utterance.The intonation is nearly 'normal'.

This type of correct Action Request with the use of Politeness Markers has probably been learnt by rote.

A few days later Ron was again sitting on the tyre,waiting for me to approach him.This time he said: "Can I push up on the tyre,please Stefan." I replied:"Pardon?Can you say that again?" Ron repeated: "Can I push up on the tyre,please Stefan" (this time stressing the "I").

I suppose this phrase was so muddled in an identical situation because of a change in the boy's emotional state.In this latter example only bits of the correct form are left with the proper Politeness Markers.

The striking thing here is that Ron hardly tried to catch my attention.He only minimally raised his voice,did not call me,did not get up and fetch me and did not try to establish eye-contact.The precisely learnt Action Request is a correct-

ly expressed communicative intention,but the autistic child typically fails to "shape" the situation in which the speech act occurs so that it will be as clear and informative as possible.Thus the child does not make sure that his utterance has the proper expected illocutionary and perlocutionary effect .In our case the communicative intention had the effect only because the addressee had anticipated an utterance and had paid extra attention to the boy.
Ronald's difficulties in understanding the reference of individual words,in grasping the speaker's intentions and his failure to include situational and gestural information in a dialogue is seen in a situation which reminds one of the long "conversation" we have already discussed:

Situation C: Ron is in the hall leading to the bathroom.He is waiting for his turn to have a bath.The houseparent knows that Ron has not had a bath.

Hp: Have you had your bath,Ronald?
R: Yes,I have.
Hp: Go to the dormitory then!
R: Do you want to have a bath?Do you want to have a bath? (Restless,upset,jumping up and down.)
Hp: No thanks.What's the matter,Ronald,you've had your bath,haven't you? (Leaves the room.)
R: Yes,I have ...Do you want to have a bath? (To the other houseparent:) Do you want to have a bath?
Hp2: No,I don't.
R: Do you want to have a bath?
Hp: (Re-enters.)Have you had a bath,Ronald?
R: Yes,you have.
Hp: Have you had a bath?(Goes to Ron,talks slowly.)
R: Yes,you have.
Hp: Have y o u h a d a b a t h ?Nnn.(Shakes his head.)
R: Yes.Be a good boy,be a good boy.No..I.. ..you have...
Hp: Have you had a bath? (Gives correct answer with facial motions,doesn't actually pronounce the words.)
R: No,you haven't.No,I haven't.
Hp: Do you want to have a bath?
R: Yes please.

Again,the communicative intentions are those of "yes/no"-Answer,Expression of Desire in the form of "yes/no"-Questions, and the rapid emotional "Be a good boy".

Situations D:

1) Ron has added extra chocolate-powder to his drink.
The author (St) asks:
St: Does it taste better,now,is it better?
R: Yes,it has.
St: Yes,it is.
R: Yes,it is.

"Yes"+ personal pronoun + a form of "have" is triggered off automatically,although the correct verb is given in the question.

2) On meeting Ron outside,the author says:
St: Hello.
R: Hello,man.
St: Where do you live?...Do you live in Luton?
R: Yes,I have.

I never heard Ronald initiate or end a conversation or greet anyone on his own with Boundary Markers like "Hello" and "Good bye".The impersonal "Hello,man" resembles another example where Ron did not use the personal pronoun even though he knew it:

3) Ron and the author are in the children's room.
R :(To St)Can I climb on this back,yes please.

Situations E:

1)One afternoon I was sitting next to Ron on the settee.We had not talked to each other.Then Ron said:
R: Think it's a grey,it's a grey,it's a grey....

Ron gave no clues as to the object to which"it" referred,what the pragmatic status of his utterance was,what he expected from the listener,whether his words were addressed to anyone, or whether this was a goal-directed expression of a communicative intention at all.He used no gestures,did not point to anything,did not turn to me,and did not establish eye-contact.

What does the listener do in such a case?The word carrying the most information is "grey".And when two people are sitting right next to each other one assumes that an utterance is being used to express a communicative intention.So I looked around for something grey.Just in front of us there was a greyish-green mattress.So I said,"Mattress."Ron did not say anything.His teacher told me that this kind of "It's a..,it's a.."-utterance was Ronald's typical way of expressing the communicative act of Wh-Questions.The beginning of the Identification-type (e.g."It's a car") is used to communicate the boy's desire to solicit information about the name or the identity of an object.

2) One day Ron went to his teacher,holding the lower part of his ear and said:
R: It's a,it's a,it's an ear....,it's an ear tongue.
T: It's an ear-lobe.
Ron repeated this sentence.

I have never heard Ron produce a correct and complete Wh-Question.

I have mentioned earlier that autistic babies do not seem to enjoy the playful production of sounds and syllables.Some of the children I met at the school produced long sounds and noises but did not appear to be playing with these.They did not modulate the sound-sequences and did not use them for communicative purposes[1].Only on one occasion did I hear an autistic child freely produce sounds and words for the purpose of engaging in a playful interaction with another person:

Situation F: Ron and the author are sitting on a wooden platform in the playground.Ron slaps the author's arm and says:"Smack."I reply:"Smack." Ron again slaps my arm and says:"Slap."I repeat:"Slap."Ron again slaps my arm and says something like"Smurk".I repeat this.Together we go through a long list of words.

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1) For a study of children's play with various aspects of language see Garvey,C.(1977).

In the situation described,every time Ron slapped my arm,he uttered a word.I either repeated the word or altered it slightly.Ron greatly enjoyed this game and was very eager to find new words.At first they sounded similar,later he offered various different sound-creations and nouns without any logical sequence.Some of these were proper English words, some he had either invented or heard elsewhere,perhaps on television.These words served the purpose of establishing and continuing a playful interaction.The word and the slap constituted the unit of action.Their intended communicative function was that of Game-marker.

The following examples may give the reader an idea of the type of thing Ron would utter when he appeared to be talking to himself and did not convey that he expected his utterances to have an effect on the listener.

a) Alone at the table,Ronald was painting.In a very expressive voice,slowly and clearly pronouncing every word,he said:
R:Whiskers,whiskers,splish,splish,....splish,splish.

b) Clearing away the dishes and looking at a picture on the wall showing a seashore,Ron said in a sort of sing-song:
R: Ron,Ron,Ron,mum,mum,mum,mum.

c) Sitting on a chair doing nothing,he would often say:
R: Ron is being a good boy now.Ron is being a very good boy now.

d) Sitting on the settee doing nothing,he said:
R: Had too many fishcakes,been sick....had too many fishcakes ....too many.

The listener will often try to establish the reason for such utterances and try to interpret them as meaningful comments or statements or even messages.To find out just why and for what purpose the child has uttered these phrases at a certain moment in a certain situation is very difficult.Very often we are listening to delayed echolalia.Even then one would

like to know what stimulated the child to produce precisely these words.
On one occasion a houseparent tried to interrupt,to break into the constant muttering the boy had been engaged in.She described her short attempt to communicate:

Situation G: R: (To himself.) ...break it in half,break your head in half.It should have been done years ago.
Hp: Who said that?
R: Mummy broke biscuit.Ronny has been a bad boy.Ronny broke the grey handle.
Hp: On what?
R: On the radio.

Further information had to be extracted by detailed questions. In no way could an autistic child like Ron be expected to relate an entire story.

4)The speech of other children who belong to groups 2 and 3
We will now discuss examples from other children who belong to groups 2 and 3.
Let us look at a situation where a group of autistic boys are gathered together for lunch:

Situation H: Seven boys,aged 10 to 17,are seated around a table with the houseparent and the author. It is very quiet,the children are not talking to each other.One boy,whose linguistic ability is that of group 4,will now and then exchange a few words with the adults.The other children produce only one kind of stereotype phrase which they have been taught to use during meals:
"May I have the bread please,Peter",or "May I have the salt please,Ron".Some of the boys only utter the last three words of these sentences.

They have been trained to use this type of sentence in this specific situation when they wish to be given something.They realise that the utterance of this type of sentence is the best way to obtain what they want in this situation.They

have learnt to pronounce the correct sentence and thus give the proper grammatical form to their communicative intention. Here Ronald does not use his typical "Do you want...?"-requests. The striking feature of this interaction,however,is the fact that these sentences are uttered very quietly,the children do not raise their voices,do not look at the addressee or establish eye-contact with him.The only clue by which a listener can identify the person being talked to is the slightly stressed name at the end of the sentence.This is very different from the way normal children communicate! The autistic child often does not seem to talk to or with, but rather at another person.The child does not establish contact,does not make sure that the addressee knows that he is being talked to and is expected to react.The grammatical form of the utterance is correct,but the pragmatic aspects of this communicative act are not realised.The boys do not attract each others' attention;they simply utter the sentence into space,as it were.But it works!The children in this group have learnt to pay attention to these quiet Action Requests.If an Action Request is not fulfilled,if the supposed addressee does not react,the speaker simply repeats his phrase until someone does react.No other type of sentence is used.These children have learnt to use this type of sentence in this specific situation.It works here,which is a great success.Many of them fail,however,to generalise and use in other situations what they have been taught,e.g. Ron's "You can.."-utterances.The autistic child would,of course,not be able to communicate his intentions to a different kind of audience,because the normal listener expects all the pragmatic devices of a conversation to be made use of,so that the speaker's message is transmitted as clearly and precisely as possible.

A number of autistic children have learnt to express their desire to be given something by the utterance of the above mentioned standard phrase.But they fail to realise that to

produce the utterance act alone is not sufficient.They do not understand that the listener must be made aware of the fact that the speaker is performing a directed speech act and that this communicative interaction can only be successful if the hearer recognises the illocutionary status of the utterance and thus also the speaker's expectations about its consequences.

Situation I: On several occasions it happened that when I was sitting at a table or standing somewhere, observing or talking and paying no attention to my immediate surroundings,I suddenly became aware of a quiet monotonous child's voice somewhere near me,repeating over and over again a phrase like:"Biscuit please, Stefan.Biscuit please,Stefan",or :"Can I go to the toilet please,Stefan? Can I go to the toilet please,Stefan?"

I do not know how long the child had been repeating this.He or she did not raise his/her voice or make any effort to catch my attention,but just stood there near me repeating the phrase.Autistic children who use language even less than these will take the adult's hand and push it to the object they desire to have.

Situation J: Phil,a very withdrawn and quiet boy of eleven, once came up to the houseparent and the author and said:"Don't be silly,Thomas!"(I will call the houseparent by this name.)Phil repeated this until the houseparent jumped up,ran after him and caught him.The boy loved being chased and then caught.So he came again and again and repeated:"Don't be silly,Thomas!" When the houseparent no longer reacted he came to me and said:"Don't be silly,Stefan!" I played the same game with him.Later he changed his phrase and said:"Rubbish,Stefan!"Rubbish,Stefan!"He greatly enjoyed this game and made an effort to be understood.

He did establish eye-contact,but never shouted,never changed his stereotype phrase.The communicative intention of these utterances was clear.They were used as Game-markers,to initiate a playful interaction.

Situation K: Sometimes communication fails completely.

Carol,a girl of eleven,whose vocabulary is very limited,once came to me in tears and said:"Umbrella",a word she used frequently. She was very upset and took me by the hand, sobbing and repeating "Umbrella".I had no idea what the matter was.Another girl was holding an umbrella,so I took Carol to her, thinking that she might want to have the umbrella.Carol looked at the umbrella and at the other girl,but did not try to take it. She then led me across the playground,crying and still repeating "Umbrella".She did not give any clues at all.

Her words could not be explained by situational information, either.I never found out why she had been upset and why she had repeated that word.Her teacher had not been able to link this utterance with any specific context.Its meaning remained unclear.

Let us recapitulate.We have been looking at examples of communicative intentions expressed by autistic children whose linguistic abilities are those of groups 2 (and 3:Ron). With the exception of Politeness Markers in phrases like "May I have.. please,Peter" ,which the children have been taught to use (to pronounce automatically) in specific situations, these boys and girls do not by themselves use any Conversational Devices,the function of which is to

> "establish,maintain,end or otherwise regulate interpersonal contact and conversations."[1)]

Performatives are very rare.Their function is to

> "accomplish acts by being said."[2)]

We have seen Phil produce a type of Game-marker ("Rubbish, Stefan"),and some children say "No,no" when they wish to protest.The communicative intentions most often expressed are those of Permission Request,Action Request,"yes/no"-Answer and Internal Report (Desire).

Permission Requests usually have the form of statements:

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1) in Dore,J.(1977);p.146.

2) in Dore,J.(1977);p.146.

"You can sit on the settee","You can have some more potatoes".
Action Requests are expressed by a stereotype phrase: "May I have the butter please,Peter".
"Yes/no"-Answers are usually not expanded,but simply consist of the words "Yes" or "No",in Ron's case of "Yes,I have","Yes,it is", etc.
Desires are given the form of a question: "Do you want to have a biscuit?"
"Yes/no"-Questions and Wh-Questions are very rare.Some children do not ask any questions at all.One girl expressed "yes/no"-Questions by a statement: "We are going to Granny's tomorrow." "It's a..,it's a .." was Ron's way of asking about the name of an object.
The children fail to grasp the fact that it is necessary for the speaker and the listener to co-operate in the linguistic interaction,that the performance of the utterance act alone is not sufficient,that the illocutionary force and the pragmatic factors determine the success of the communication.

5a) Examples of the speech of children who belong to group 4

We shall now consider children who belong to group 4,i.e. children whose linguistic abilities are considerably better. These children are slightly older than those we have been discussing (12 to 17).Again there are considerable differences between the individual children.A few of them talk quite freely and well;others are very quiet,hardly utter a sentence and do not communicate much.Their command of grammar is quite good.They have learnt to build sentences correctly. They can ask proper "yes/no"-Questions and Wh-Questions and express Action Request ("Can I have ..,please") .Much of their linguistic performance consists of learnt schemata.Relevant echolalia is quite frequent,their vocabulary is relatively large and allows them to talk about many things.Their understanding of simple clear unambiguous sentences is good.

Situation L: If a child is emotionally disturbed and very upset,he or she may fall back into disturbed speech patterns,like Dan,who will say:
D: I'm not going to have biscuits with my tea tonight.

If the listener's reaction to this type of phrase is:"Fair enough,if you don't want to have biscuits - that's all right", the boy will be even more upset,because what he really intends to communicate is that he would like to have biscuits, but is not sure whether he will be given any!
The children of this group master syntactic and semantic aspects quite well and can participate,to a certain extent, in conversations.But there is still a striking difference between their ability to interact and that of normal children. Again it is the pragmatic aspect of language which causes enormous problems.The children's linguistic competence is not sufficient to engage in true conversations.True conversations depend on the ability to realise that both interlocutors are together creating interaction.The speaker must create an image of the listener,the listener must understand the speaker's implications;both must follow (or 'break',in the Gricean sense) the Conversational Maxims and co-operate. One basic prerequisite for this is the development of social empathy.Newson[1] writes about the feeling of social empathy in autistic children:

> "To my mind it's the thing that comes last,and with most difficulty I believe;in fact,it's the thing that's never fully achieved,even in the most recovered children,who continue to have most difficulty with this over the years."

If linguistic interaction is to be successful,both interlocutors must be able to empathise and to create an image of each other.The autistic child's rigidity of thought processes

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1) Newson,E.(1977);p.45.

can also be seen in its use and understanding of language. This tends to be very literal,pedantic and inflexible.The autistic child is not able to understand the use or the pragmatic interpretation of an actual utterance,which again is part of a whole sequence of action.The child's understanding of those rules is impaired which assign

> "a particular speech act or illocutionary force to this utterance,given a particular structure of the pragmatic context" [1].

Everyday language,however,is full of double meanings,images, idioms.The meanings of a word or a sentence are fluid and always depend on the interlocutors and the situation.
Let us consider an example of the type of phrase we use very frequently in everyday conversations: "It's cold".What the speaker wants his utterance to be taken as and how the listener can interpret this utterance,becomes clear only after the pragmatic factors of this communicative act have been analysed.Depending on preceding acts and utterances,on the interlocutors' shared experiences,on the presence of objects and people,on the tone of voice,intonation,gestures, facial expressions and bodily movements,and other channels of information,the communicative intention expressed by this utterance might be paraphrased in any one of the following or a number of other ways:

"It's cold" :
a) Please shut the window!
b) Put more wood on the fire!
c) Hand me my coat!
d) You had better put on another warm pullover!
e) What a disappointment,you promised to have the room nice and warm!
f) I'm sorry my old car won't start!
g) Can I go into the house now?I don't want to wait out here!

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1) Dijk,T.van:"Context and Cognition:Knowledge Frames and Speech Act Comprehension" in Journal of Pragmatics, Amsterdam,1977,I;pp.211-232.(p.213).

h) I told you to turn the heating on. Why didn't you?
i) I can't stand that expression in the murderer's face,that look in his eyes!
j) I am certainly not enjoying this cup of tea!
k) Hurrah! The snow will be fine,we can go skiing!

The autistic child will understand the simple proposition that the air is cold,the tea is cold,etc.,but that additional information expressed in the illocutionary force eludes him.The whole meaning of this utterance in this specific situation is not grasped.Nor can the autistic child use such pragmatic devices for his own communicative purposes.

Situation M: The following incident was reported to me:

A 17-year-old boy was slowly shuffling along through the hall,dragging his feet.A teacher called to him:
"Fred,pick your feet up!"
The boy stopped,looked at his feet,looked at his hands,looked at his feet again.It was quite obvious that he was trying to work out how he could possibly pick up his feet with his hands.

This boy belonged to group 3,but the literal interpretation of language is typical for most autistic children.Expressions like "to laugh oneself sick" or "to cry one's eyes out" can be quite frightening to autistic children because they are taken to be literal statements.
One of the striking features of these children is their way of starting a conversation.Quite often a child will a approach a stranger (e.g.a visitor) and say,"What's your name?" or "What are you doing?"or "I'm fourteen,how old are you?".They use no Boundary Markers to initiate contact.Some children have learnt to say "Hello" first and only then to ask the above type of direct Wh-Question.

Situation N: Jane and I were standing in the hall.Jane had met me a few days before,so I was not a total stranger to her.She turned to me without uttering any introductory words and said: "Are you staying here tonight? Will you be here next term?What will you do tonight?Will you work tonight?"
I only replied after the fourth question.

Two things are important here:first,the absence of an introduction,of Boundary Markers;second,the immediate focussing on the question of my further activity.

Conversations very often consist of a series of questions which the autistic child utters in rapid succession.These questions are about the specific topic the child is interested in.The addressee's function is often to provide information only.There is no social awareness,and the children are unable to empathise with the listener and thus lead him into the conversation,to interact with him and together to create the communicative act.They do not seem to realise when their interlocutor is offended,bored,busy or in a hurry to get away.

Situation O: Sam used to come to me and ask me endless questions like:

How fast is a Concorde?
Is it faster than a DC-10?
How fast is a DC-10?
Is a Concorde bigger than a DC-10?
How big is it?Is it the biggest airplane?
Have you been on a Concorde?
Will you fly with a Concorde?
What would happen if an engine caught fire?
Would the plane crash?
What would happen if.....

This would go on for a long time.Sam fell into an almost rhythmic speech-pattern,always stressing the first word of the sentence.I would answer the first questions as far as I could. But the boy did not seem to think over the answers for very long.He never made any contribution by adding a thought of his own.

Situation P: Dan,who was very interested in Italian at the time,came to me and asked me word after word in Italian and took no notice of my attempts to communicate that my Italian vocabulary was extremely limited.When a housepa-rent finally told Dan to ask me about German words instead,he replied:"I want to learn Italian."

This is an acceptable reaction,but this type of interaction became very tiresome after a while,especially because Dan used the same question-patterns over and over again and never stopped to wonder about or combine or play with the new words.

Ralph,aged 16,has made much progress at the school and has a part-time job in the nearby town.He has a large vocabulary and can express himself very well.He is the only autistic adolescent I have met who shows an interest in the precise meaning of a word.On one occasion I said that I thought the countryside of Turkey was rather barren.Ralph was not sure about the meaning of this word,but did not say anything like *"What does 'barren' mean?" He asked:"How could we best define 'barren'?" This kind of inappropriate formal way of expressing oneself in very casual situations is quite frequent among the more able autistic children.This boy once approached me during break-time.We had the following conversation (We had met two months before and had not seen each other since):

Situation Q:
Ra: Hello,what's your name?
S : Stefan W-
Ra: Stefan Weber,that's right.Have you been back to Switzerland?
St: Yes.
Ra: Do you have a driving-licence?Do you drive a car?
St: Yes,I drive my dad's car.
Ra: Is it a left-hand drive or a right-hand drive,that is,is the steering-wheel on the left?
St: Yes,that's right.
Ra: In that case you drive on the right side of the street.
St: Yes.

(cont.)

(Sit.Q)

Ra: Are there motorways in Switzerland,and do they go through the mountains?Do they cross the valleys on high bridges and then go through the mountains?
St: Yes,that's right.They go through the mountains,there are tunnels which lead through the Alps.
Ra: Do they go from the North to the South? Have you driven on these motorways?
St: Yes,I have.
Ra: Did you drive from North to South or from South to North?
.....

Notice the rapid narrowing down of the scope of conversation-topics.Ralph very quickly moved away from general and polite exchanges to the concrete subject he was interested in.But he did not inform his conversation-partner why he was keen on this subject,did not leave open the possibility of changing the subject.
Conversations with autistic children are often very serious.

The following lines are taken from a (reconstructed) conversation which I had initiated by asking Ralph about his trip to an aircraft-show.

Situation R: I asked Ralph whether he had enjoyed the show,what kind of planes he had seen,what the planes had done,and with whom he had gone to the show.His answer to the last question was something like this:
"I went with Mr.and Mrs.Jones and their son Alex.Mr.and Mrs.Jones have four children, two sons and two daughters:Alex,John,Rose and Judith.So that is Alex Jones,John Jones, Rose Jones and Judith Jones.Only Alex came with us to the show...."

Given the actual situation in which we were interacting and the topic we had been talking about,this answer was far too long and too detailed.I had in no way indicated that I wished to have all this information.Considering the purposes of our actual conversation Ralph's contribution at this point was far too informative,thus also irrelevant and too long.This is just one minute example of what we often find when con-

versing with autistic children: They break the Conversational Maxims,especially those concerning Quantity,Relation and Manner,without,however,intending to convey additional information by doing this.
They are not implying anything.This is where their communicative use of language differs from that of the normal interlocutor,who uses the pragmatic devices of breaking the Conversational Maxims for the purpose of making his contribution more informative.

b) Conversational implicatures

Let us take a closer look at Grice's concept of Conversational Implicatures.We have mentioned that deliberate flouting of the Conversational Maxims serves to convey to the hearer that the speaker is implying additional information. When the hearer recognises that the speaker has broken a Conversational Maxim,but has no reason to think that the speaker is lying or deliberately being irrelevant,he will conclude that the flouting of the Maxim is a meaningful act, i.e. that it is to be interpreted as a Conversational Implicature.The hearer will then try to work out the speaker's communicative intention:

> (CP=Co-operative Principle)
> "He has said that p;there is no reason to suppose that he is not observing the Maxims,or at least the CP; he could not be doing this unless he thought that q; he knows (and knows that I know that he knows) that I can see that the supposition that he thinks that q IS required; he has done nothing to stop me thinking that q; he intends me to think,or is at least willing to allow me to think,that q; and so he has implicated that q." [1)]

Here is Grice's example for the flouting of the first Maxim of Quantity:

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1) Grice,H.P.(1975);p.50.

"A is writing a testimonial about a pupil who is a candidate for a philosophy job,and his letter reads as follows:'Dear Sir,Mr.X's command of English is excellent,and his attendance at tutorials has been regular.Yours,etc.' " [1]

If A were uncooperative,he would not write at all.The man is his pupil,so he must have more information about him.He must also know that more information than this is required. So he must be

"wishing to impart information that he is reluctant to write down.This supposition is tenable only on the assumption that he thinks Mr.X is no good at philosophy.This then is what he is implicating." [2]

Conversational Maxims apply not only to the statement of an utterance,but also to its implicatures.
Making use of the hearer's knowledge of the Co-operative Principle,a speaker can,for example (by breaking the Maxims of Quality),express: (Grice's examples)

a) Irony: "X,with whom A has been on close terms until now,has betrayed a secret of A's to a business rival.A and his audience both know this.A says 'X is a fine friend'."

b) Metaphor: "You are the cream in my coffee!"

c) Meiosis: "Of a man known to have broken all the furniture,one says 'He was a little intoxicated'."

d) Hyperbole: "Every nice girl loves a sailor."

The following three examples show effects produced by the breaking of Maxims belonging to the group headed by "Be perspicuous".

e) Ambiguity: Grice quotes Blake's verse "Never seek to tell thy

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1) Grice,H.P.(1975);p.52.
2) Grice,H.P.(1975);p.52.

(") love,Love that never told can be",and examines the related sentence "I sought to tell my love, love that never told can be",as to possible interpretations.

f) Obscurity: "Suppose that A and B are having a conversation in the presence of a third party,for example a child, then A might be deliberately obscure,though not too obscure,in the hope that B would understand and the third party not." Thus A implicates that the third party should not be told what A and B were communicating about.

g) Failure to be brief or succinct: Compare the two sentences "a)Miss X sang 'Home sweet home'.

b)Miss X produced a series of sounds that correspond closely with the score of 'Home sweet home'." [1)]

These Conversational Implicatures are all easily understood by the hearer because of his ability to recognise the flouting of a Conversational Maxim and his capacity to interpret the pragmatic factors of the context which determine the meaning of the utterance. The autistic child is unable to use these devices and cannot recognise the speaker's intentions expressed in Conversational Implicatures.

Kempson's definition of the basic characteristics of the Gricean Conversational Implicatures gives a clear picture of what is required for these channels of communicative interaction to function successfully:

"I)They are dependent on the recognition of the Co-operative Principle and its maxims.

II)They will not be part of the meaning of the lexical items in the

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1) Grice,H.P.(1975);pp.52-55.

2) Kempson,R.(1977);pp.71-72.

(") sentence since their interpretation depends on a prior understanding of the conventional meaning of the sentence.

III) The implicature of an utterance will characteristically not be the sole possible interpretation of that utterance. There may well be more than one possible assumption which will reinstate the Co-operative Principle in the face of an apparent breakage. Since these assumptions are not explicit, they are often indeterminate (...).

IV) The working out of an implicature will depend on assumptions about the world which the speaker and the hearer share (...). They will therefore not in general be predictable independently of the shared assumptions particular to individual speakers and hearers.

V) They are cancellable. That is, an interpretation which is not part of the conventional meaning of the utterance can be explicitly denied without contradiction. 'You're the cream in my coffee but since I don't like cream, that's a dubious compliment!' " [1)]

An extremely important part of our everyday communication is based on our ability to use and interpret these Conversational Implicatures. Autistic children cannot participate in this kind of linguistic interaction. They do not understand the functioning of Conversational Implicatures. Thus their use of language is so limited, inflexible, rigid.

As the autistic child is unable to use creatively and understand the pragmatic devices by which speech acts become meaningful factors for establishing conscious communication, their purpose in using language appears to be very limited, intended for the exchange of information about concrete external objects.

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1) Kempson, R. (1977); pp. 71-72.

c) A summary of these children's use of language

Let us recapitulate. A number of the group 4 children say very little. Communicative intentions which they express are mainly Requests (except for Rhetorical Questions), Responses and Statements. Both these children and the more talkative ones very seldom express : a) Terminating Boundary Markers (which "end contact or conversation"), b) Calls (which "signal closer contact by soliciting attention"), c) Accompaniments (which "signal closer contact by accompanying a speaker's action"), d) Returns (which "acknowledge the listener's preceding utterance or fill in to maintain the conversation").

Performatives, the use of which is intended to accomplish acts by being said, are very rare:

e) Role-plays (which "establish fantasy")
f) Jokes (which "produce a humorous effect by a non-literal, playful remark")
g) Game-markers (which "initiate, continue or end a game")
h) Claims
i) Warnings
j) Teases [1]

Autistic children do not know how to use pragmatic devices in communicative interaction and frequently break Conversational Maxims without the intention of increasing the informative value of their message. They do not do this for playful purposes, either.

They are unable to create an image of the interlocutor with whom they are conversing and are thus unable to perceive his communicative intentions, because they fail to understand the use of the pragmatic devices which assign an illocutionary force to an utterance.

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1) quotations from Dore, J. (1977); pp. 146-147.

VI.CONCLUDING NOTES AND SUGGESTIONS FOR FURTHER RESEARCH

1)A brief summary

We have discussed autistic children's communicative use of language in actual,concrete situations within the framework of linguistic pragmatics.We have been especially concerned with their communicative intentions.Based on Dore's recent classification of communicative intentions underlying normal children's illocutionary acts,we first analysed the use and understanding of children belonging to groups 2 and 3 of L.Wing's categories.We examined which of Dore's types were expressed in the speech acts of the autistic children and which were not.We also discussed the specific way in which these intentions were encoded by autistic children and how the listener could interpret them.These boys and girls were found to be unable to use or understand the pragmatic factors of linguistic interaction which determine the meaning of language in a specific context.

We then discussed the linguistic performance of children belonging to group 4,whose ability to use and understand grammar is fairly good,and who have a large vocabulary.Here we again considered which types of communicative intentions were expressed in their speech acts and how these were performed.The great difficulty of these children in co-operating linguistically,in creating an image of the interlocutor, in understanding and using the pragmatic devices which allow conversations to be more than mere processes of concrete information-exchange,became apparent.

Our study of one specific aspect of language can,of course, provide only a limited insight into the communicative functioning of the autistic child.I consider the pragmatic approach to the analysis of language,however,to be a promising one for the investigation of children with linguistic and cognitive deficiencies.

We will now consider a few more points which are of interest in our discussion of the autistic child's communicative use of language.These may suggest further topics to be investigated.

2) Joint attention and the ontogenesis of speech acts

A number of recent studies of the acquisition of language have focussed on the interdependence between the development of social behaviour and cognitive structures,and the development of language.Interest has focussed on the interaction of the pre-verbal child and its mother.It has been recognised that the child takes part in an active communicative exchange with its surroundings from the very beginning onwards [1].
These dialogue-structures of the pre-verbal child are of great importance for its "knowledge of action" [2] and of communicative interaction.Bruner suggests[3] that the child is born with the capacity to construct schemata for "interpreting inter-subjective phenomena" .This capacity is based on the ability to differentiate between a class of "inter-subjective" events and other kinds of events.Bruner stresses the importance of the child's ability to learn

"the segments of joint action with the mother" [4].

Joint attention,the ability to follow the mother's lead in visual attention,an awareness of the adult's facial

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1) cf.Grimm,H.(1977),I;p.59.

2) Bruner,J.S.:"The Ontogenesis of Speech Acts" in Journal of Child Language,London,1975,2;pp.1-19.(p.8).

3) op.cit.;p.8.

4) op.cit.;p.9.

expression,smiles and eye-contact are observed to emerge in very early childhood[1].Trevarthen et al.[2] also claim,as a result of their studies,that the child's ability to communicate with other people is not a product of conditioning,but is rather an innate biological capacity.In the intensive and rapid dialogue between mother and pre-verbal child the mother's use of language serves to establish joint attention and joint reference.Routines of actions are formed in which the mother

> "will systematically act upon or comment upon what has caught their joint attention".[3]

The child thus learns more about the structure of interaction and about the function of language in specific contexts (speech acts).Bruner considers the interplay between the illocutionary function of an utterance and its grammatical structure to be of crucial importance for the child's acquisition of language.He claims that

> "the child is grasping initially the requirements of joint action at a prelinguistic level,learning to differentiate these into components,learning to recognise the function of utterances placed into these serially ordered structures,until finally he comes to substitute elements of a standard lexicon in place of the non-standard ones."[4]

This is made possible by the mother's interpretations,idealisations and expansions of the child's utterances.

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1) Grimm,H.(1977),II;p.39.

2) Trevarthen,C./Hubley,B./Sherran,L.:"Les Activités Innées du Nourissant" in La Recherche,Paris,1975,6,56;pp.447-458.

3) Bruner,J.S.(1975);p.9.

4) op.cit.;p.17.

I should like to mention here that in a recent study (Curcio, 1978[1]) of the sensorimotor functioning of mute autistic children these subjects were found not to use "protodeclarative"gestures.This term was used by Bates (1976) to describe

> "the infant's attempt to use an object to gain an adult's attention and direct it toward the object itself.Prior to speech infants point to objects and show objects to adults with no obvious intent other than to indicate the existence of the object and to share it with an adult."[2]

Such protodeclarative gestures may represent an important stage of prelinguistic development.Bates considers them as possible "important precursors to spontaneous naming..."[3]
Dore[4] examined how linguistic conventions necessary to express intentions are acquired.He described the emergence of intentions and their combination with the acquisition of words.He proposed a theory which describes the single-word utterances of one-year-old children as "Primitive Speech Acts". These are defined

> "as containing a Rudimentary Referring Expression....and a Primitive Force indicating device (typically an intonation pattern)".[5]

A Primitive Speech Act is an utterance which consists formally of "a single word or a single prosodic pattern".[6]
Its function is to communicate the child's intentions before the acquisition of sentences.

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1) Curcio,F.:"Sensorimotor functioning and Communication in Mute Autistic Children" in Journal of Autism and Childhood Schizophrenia,Washington,1978,vol.8, no.3;pp.281-292.

2) op.cit.;p.283.

3) op.cit;p.291.

4) Dore,J.(1973);and Dore,J.:"A Pragmatic Description of Early Language Development" in J.of Psycholinguistic Research, New York,1974,vol.3,no.4;pp.343-349.

5) Dore,J.(1975);p.31.

6) Dore,J.(1974);p.345.

These studies all stress the importance of the context in which language is used. Linguists must realise, however, that, as Dore (1978[1]) has pointed out, recent pragmatic studies have not been able to account for and explicate the emergence of grammar, the grammaticalisation of the communicative and conceptual content in the child's earliest "sentences". A comprehensive theory of language acquisition will have to include an explication of

> "conceptual, communicative, and grammatical inputs".[2]

Joint attention and the awareness of interpersonal activity, in which the earliest attempts to use language are embedded, are basic requirements for the success of further linguistic interaction.
Discussing language acquisition, Bruner (1978[3]) strongly emphasises that

> "joint enterprise sets the deictic limits that govern joint reference, determines the need for a referential taxonomy, establishes the need for signalling intent, and provides a context for the development of explicit predication."[4]

Here lie the roots of the pragmatic understanding and use of language. It is here where things go wrong in the autistic child's development. Both the development of the capacity for joint attention and the awareness of the interpersonal activity seem to be severely impaired because the autistic child fails to grasp their meaning and purpose. Research in this field would be of great value for a better understanding of the onset and development of the autistic child's communicative use of language.

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1) Dore, J.: "Conditions for the Acquisition of Speech Acts" in Marková, I. (ed.) The Social Context of Language, J. Wiley&Sons, Chichester et al., 1978.

2) op.cit.; p. 88.

3) Bruner, J.S.: "From Communication to Language" in Marková, I. (ed.) (1978).

4) op.cit; p. 44.

3) A cognitive theory of language use

To link the psychological, social and linguistic determinants of the acquisition and the use and understanding of language, empirical studies of

> "the psychological and social properties of language processing in communicative interaction " [1]

are necessary. An integrated cognitive theory is needed to explain the processes and structures involved in the planning, executing and understanding of speech acts:

> "A cognitive theory of pragmatics will have to elucidate what the relations are between various cognitive (conceptual) systems, and the conditions for the appropriateness of speech acts in given contexts." [2]

Such a theory will have to explain how the listener comes to understand which intentions or which conventional acts, like illocutionary forces, are implied in the speaker's utterance. Complex information-processing strategies have to interact with many sources of knowledge and beliefs to allow decisions to be made about the content of the speaker's message. This includes the evaluation of past and present acts, beliefs about the past and present, and assumptions about the interlocutor's intentions. Another aspect is important:

> "The interpretation of speech acts involves world knowledge more in general. Speech acts often pertain to past or future activity of the speaker or the hearer: they are essentially functioning as expedient ways in which such activities are planned, controlled, commented upon, etc., or they are intended with the purpose to provide information

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1) Dijk, T.van (1977); p.211.

2) op.cit.; p.212.

(") for such actions.Hence,they basically require knowledge about what is necessary,plausible or possible in the real world."[1)]

Little is known so far about the cognitive evaluation procedures involved in analysing text and context in speech act sequences.Work in this field is essential to the understanding of the child's development of the ability to interpret the pragmatic factors which determine the meaning of language in communicative interaction.

4)Neurolinguistics

In 1975 Molfese,Freeman and Palermo published a report[2)] about a very interesting experiment they had conducted with a group of adults,a group of children aged from four to eleven,and a group of infants aged from one week to ten months.Four speech stimuli and two non-speech acoustic stimuli were presented to these individuals.Their reactions (auditory evoked responses) were recorded from the temporal regions of the left and the right cerebral hemispheres.This study was meant as an

"attempt to determine whether lateralization of language functions occurs prior to time of language acquisition". [3)]

The results of this experiment are interesting:

a)The auditory evoked response to words and syllables exists in infants of less than one year of age.Their response resembles that of the older children and of the adults.This suggests

"that some of the cortical processes involved in the

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1) Dijk,T.van (1977);p.216.

2) Molfese,D./Freeman,R./Palermo,D.:"The Ontogeny of Brain Lateralization for Speech and Nonspeech Stimuli" in Brain and Language,New York,1975,2;pp.356-368.

3) op.cit.;p.357.

(") perception of speech after the acquisition of language may be present in preverbal infants".[1]

b) In most infants the auditory evoked response to speech stimuli are lateralised to the left hemisphere, whereas non-speech auditory stimuli are responded to in the right hemisphere.

The authors conclude that

> "different areas of the brain are apparently preprogrammed to differentiate between certain types of stimuli very early in life, perhaps before birth".[2]

They further suggest that it is

> "probably that the hemispheric selection of response to verbal and nonverbal stimuli in the infant provides a basis for the later development of speech perception and perhaps speech itself".[3]

I would be very interested to know whether autistic infants show the same reactions, the same auditory evoked responses, whether they make the same kind of distinction between words or syllables and non-speech stimuli. Perhaps an experiment like this, conducted with autistic children, would provide important insights into the nature of the autistic child's basic disturbances.

Let us consider another recent report: In a study published in 1978, E.G. Blackstock[4] investigated the possible connections between the asymmetrical specialisation of the cerebral hemispheres and the development of autism. In the first part of

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1) Molfese, D. et al. (1975); p. 365.

2) op.cit.; p. 365.

3) op.cit.; p. 367.

4) Blackstock, E.G.: "Cerebral Asymmetry and the Development of Early Infantile Autism" in J. of Autism and Childhood Schizophrenia, Washington, 1978, vol. 8, no. 3; pp. 339-353.

his paper the author presents insights gained in recent research in the field of cerebral cortex functioning. He suggests (If only it were as simple as it sounds!): Each hemisphere of the cerebral cortex is

> "responsable for quite divergent kinds of information processing". "This asymmetrical spezialisation of hemispheres may be present at birth."[1)]

The left hemisphere is mainly responsible for the processing of "language and analytic or propositional information" and may be "better able to relate stimuli to past experience of a subject".

The right hemisphere deals with "other kinds of nonverbal, holistic, or appositional information" and also with "the sound gestalt and such specific aspects of music as harmony, intensity..."

Another important mode dealt with here is the visuospatial information. The right hemisphere processes

> "stimuli that are not easily identifiable or referable".

Further studies are cited to show that

> "visual aversion, and perhaps orientation in space seem to be directionally influenced by the activation of one cerebral hemisphere with a corresponding suppression of the other".[2)]

The central hypothesis Blackstock wishes to set forth is

> "that autistic children are born with a cortical organization that is continually biased toward processing information by the right hemisphere".[3)]
>
> "If a shift to right cerebral processing does occur before or just at birth, then it would follow that the kind of information that is normally processed by the right brain is the chief content upon which the autistic child builds a hierarchy of schemes and cognitive structures;...The result would be a

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1) Blackstock, E.G. (1978); p.340.

2) op.cit.; p.341.

3) op.cit.; p.341.

(") hierarchically organized structure of nonverbal or spatial schemes that would process only nonverbal,musical,or spatial information and virtually ignore language."[1)]

The cause of the impaired information-processing in the left hemisphere may be some kind of brain disease or virus which affects specific parts of the brain.To support this explanation,Blackstock refers to the recent findings of several researchers,e.g. the work of Hauser,DeLong,Rosman[2)].
Their pneumaencephalographic studies of 17 children

"with a history of retarded language development and autistic behaviour disturbances"[3)]

showed "ventricular enlargement,indicating a deficiency of brain substance in the left cerebral hemisphere".[4)]

They conclude that

"the dysfunction of the medial temporal lobe is a major factor in the pathogenesis of the syndrome of infantile autism".[5)]

Conclusions about the primary cause or causes of autism based on the investigation of neurological and biochemical abnormalities,however,must be drawn with great caution.
In order to find out more about the possibility of neurological dysfunction,Finegan and Quarrington[6)] studied unfavourable pre-,peri-,and neonatal events in the birth records of 23 autistic children.They found that a few potentially neuropathogenic factors occurred at a significantly high rate in this group.

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1) Blackstock,E.G.(1978);p.343.

2) Hauser,S.L./DeLong,G.P./Rosman,N.P.:"Pneumographic findings in the infantile autism syndrome" in Brain,London, 1975,no.98;pp.667-688.

3) op.cit.;p.683.

4) op.cit.;p.680.

5) op.cit.;p.683.

6) Finegan,J.-A./Quarrington,B.:"Pre-,Peri-,and Neonatal Factors and Infantile Autism"in J.of Child Psychology and Psychiatry,Oxford,1979,20;pp.119-128.

In two experiments with autistic and normal children, Blackstock tested the listening preferences of his subjects, intending to find out whether the right cerebral hemisphere was more active than the left in autistic children.

> "Results showed that when given a choice between verbal and musical material, the autistic children preferred music, while normal children showed no preference. Secondly, autistic children listened to both types of material predominantly with the left ear. Although normal subjects showed greater variation among themselves, they tended to listen to music more often with the left ear and to listen to verbal material more often with the right. These results support the notion that some autistic children are predominantly right-hemisphere processors."[1)]

Findings such as presented in Blackstock's paper give rise to interesting speculations, but more neurolinguistic research is needed, and only further investigation of the correspondence between the cerebral organisation and the processing of specific modes of information will show to what extent one may generalise from such insights. More knowledge about the various processes involved in the evaluation of all the factors which contribute to "verbal information" and to "language" is needed.

5) A final note on the teaching of language

Various approaches and techniques have been used to teach the use and understanding of language to autistic children. They include, for example, the method of operant conditioning (discussed by Yule/Berger[2)]) and the teaching of cognitive

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1) Blackstock, E.G. (1978); p.339.

2) Yule, W./Berger, M.: "Behaviour Modification Principles and Speech Delay" in Rutter, M./Martin, J.A. (eds.) The Child with Delayed Speech, Clinics in Developm. Medicine 43, Heinemann, London, 1972.

skills underlying language development (described by Taylor[1]). Researchers (e.g. Lovaas 1977[2]) have studied the use of behaviour-modification techniques in language-training programmes designed for autistic children. In general, some improvement in various linguistic skills has been achieved. Every step towards the ability to use language for communicative purposes, like the verbalisation of the child's desires, fears or bodily pains and injuries, is important and helps to overcome social isolation. In language-programmes using behaviour-modification techniques the following aspects have proved to be extremely problematic:

- -the maintenance of once acquired linguistic abilities;
- -the ability to transfer from the structured training-laboratory to free and unpredictable speech-situations;
- -the motivational factors involved in the production of spontaneous speech.

Guidelines have been given for people inexperienced with autistic boys and girls and also for the parents and teachers of these (e.g. Wing[3] and Furneaux/Roberts[4]). They include suggestions about the way one should talk to autistic children. Every child will have to be dealt with individually. A special way of communicating must be found which takes into account the child's capacity for verbal interaction. Simplicity, clarity, directness and the frequent repetition of phrases and the demonstration of their meaning in a specific context are extremely important when dealing with autistic children. If certain sequences of action which include the use of language are repeated daily, the child may learn to recognise that to speak is to act.

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1) Taylor, J.E. (1976).

2) Lovaas, O.I.: The Autistic Child: Development through Behavior Modification, Irvington Publ. Inc., New York, 1977.

3) Wing, L.: Autistic Children, Constable, London, 1975 (rev. edit.).

4) Furneaux, B./Roberts, B. (eds.): Autistic Children, Routledge & Kegan Paul, London, et al., 1977.

The inexperienced person must be made aware of the fact that these children often express their communicative intentions with speech acts which differ considerably from those used by normal children.
Pragmatic factors governing meaningful communication are not understood.Hence the interlocutor conversing with the autistic child must always try to establish the child's communicative intentions by interpreting the whole pragmatic context in which language is being used.
If we try to envisage an "ideal" training-course for people who wish to work with autistic children,I think it would be very useful - because of the specific cognitive and linguistic impairment of these children - to include in the curriculum the psychological,social and linguistic aspects of topics such as:

a) the acquisition and development of language
b) the communicative use of language
c) the pragmatic analysis of linguistic interaction.

We might now look back at the problems and questions raised in outlining the goal of this study (cf.p.3).I mentioned there that it would be difficult to point out one specific language impairment which could be found in all autistic children.Perhaps we can specify this statement:
Newson[1] said that she considered social empathy to be the most problematic and difficult - if not unattainable - aspect of interaction for the autistic child.Discussing linguistic interaction,we stressed the necessity for both interlocutors to be able to empathise and to create an image of each other.Throughout this study we have seen how extremely difficult this aspect of language - the pragmatic aspect - is for the autistic child.From our analysis we can

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1) Newson,E.(1977).

conclude that it is the use and understanding of the pragmatic devices of language which are always impaired in all (speaking)autistic children.

Examining samples of the speech of several autistic boys and girls with varying degrees of language impairment (chapter V), I have tried to show - from a linguist's viewpoint - what happens in their communicative interaction with non-autistic persons.We have seen which types of communicative intentions are expressed and how this is carried out.We have also realised that a number of the 'normal' children's communicative intentions are rarely,or not at all,expressed by the autistic children.

I had decided to investigate the use of language for communicative purposes in informal,unstructured situations and include in my account the whole situational context.It seemed best therefore,as both social and cognitive factors influence the actual linguistic performance,to discuss the autistic child's language within the framework of linguistic pragmatics (cf.pp.35ff.).

Having discussed studies in child psychology,language acquisition,neurolinguistics and possible contributions from such research,we have come to realise the necessity for more interdisciplinary work which must bring together insights gained in the individual fields.At present the gap between linguistic theory,child psychology and neurolinguistics will not allow a comprehensive explanation of factors we have found to be decisive for the autistic child's impaired communication:

- -the development of awareness of interpersonal - especially - linguistic activity;
- -the cognitive evaluation procedures involved in analysing speech acts;
- -the correspondence between the cortical organisation and the processing of linguistic information.

For the present we can hope that our linguistic study will help the reader to understand what takes place in the communication with autistic children,in relation to both the child and its non-autistic partner.
Of course the goal of empirical research and theory must be to devise a therapy for the improvement of the child's communicative capacity.
I hope further research in the fields we have discussed in this paper will contribute towards achieving this very important goal.

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Lebenslauf

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